

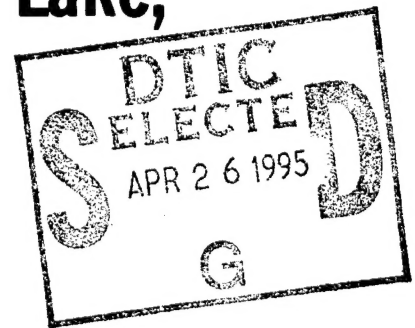


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Prepared by
Environmental Systems Analysis, Inc.
Shawnee Mission, Kansas

Archaeological Survey and Testing Downstream From Stockton Lake, Cedar County, Missouri



Larry J. Schmits
Editor
Principal Investigator

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1988

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ARCHAEOLOGICAL SURVEY AND TESTING
DOWNSTREAM FROM STOCKTON LAKE,
CEDAR COUNTY, MISSOURI

Submitted to

U.S. Army Corps of Engineers
Kansas City District

DACW41-86-C-0044

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Cultural Resources Division
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20. ABSTRACT (Continue on reverse side if necessary and identify by block number) In 1986 an archaeological survey of 148 ac and National Register testing of 18 sites within the corps easements was conducted in the Downstream Stockton Lake project area. A total of five newly recorded sites were located in the survey including 23CE423, 23CE424, 23CE425, 23CE426 and 23CE427. The 18 sites tested included four of these newly recorded sites 23CE423, 23CE425, 23CE426, 23CE427 and 14 previously recorded sites 23CE52, 23CE226, 23CE227, 23CE229, 23CE230, 23CE238, 23CE239, 23CE242, 23CE245, 23CE253, 23CE258, 23CE262, 23CE263 and 23CE409. Based on the results of the test investigations 23CE226, 23CE238.		

23CE409, 23CE426 and 23CE427 are recommended to be eligible for the National Register. Sites 23CE239, 23CE242 and 23CE245, 23CE262, 23CE263 and 23CE423 are not considered eligible for the National Register. Only small portions of sites 23CE52, 23CE227, 23CE229, 23CE230, 23CE253, 23CE258 and 23CE425 are located on U.S. Army Corps of Engineer slough easements where the test investigations were conducted. Although the portions of these sites within the corps easements do not contain significant deposits, significant deposits could be present outside the easement boundary. Further testing of the portions of the sites outside the easement would be necessary to assess their National Register eligibility.

ABSTRACT

Stockton Lake is located on the Sac River just below its confluence with the Little Sac River in southwestern Missouri. The U.S. Army Corps of Engineers has acquired slough easements along approximately 26 km of the Sac River below the Stockton dam and this area is referred to as the Downstream Stockton Project. This area lies on the eastern edge of the Springfield Plateau physiographic province and is characterized by a rugged topography with broad upland divides and narrow stream valleys.

The 1986 archaeological investigations included an intensive cultural resources survey of 148 ac and the National Register testing of 18 prehistoric sites. A total of five newly recorded sites were located by the survey and designated as 23CE423 through 23CE427. Except for 23CE424, which is a partially standing historic bridge, all of the newly recorded sites and 14 previously recorded sites including 23CE52, 23CE226, 23CE227, 23CE229, 23CE230, 23CE238, 23CE239, 23CE242, 23CE245, 23CE253, 23CE258, 23CE262, 23CE263 and 23CE409 were tested.

Based on the results of the test investigations, sites 23CE226, 23CE238, 23CE409, 23CE426 and 23CE427 are recommended to be eligible for the National Register of Historic Places. 23CE409 is not being adversely impacted and no further work is recommended at this time. Since sites 23CE226 and 23CE238 cannot be taken out of agricultural production, limited data recovery investigations are recommended for these two sites. Sites 23CE426 and 23CE427 are being impacted by erosion accelerated by power releases. Protective measures should be taken to stabilize the cutbanks currently encroaching on these sites or they should be excavated to preserve the cultural resources present at these sites.

Sites 23CE242, 23CE245, 23CE262, 23CE263 and 23CE423 are either disturbed or contain minimal content and are not considered eligible for the National Register. No further work is recommended for these sites. Only small portions of the remainder of the sites (23CE52, 23CE227, 23CE229, 23CE230, 23CE239, 23CE253, 23CE258 and 23CE245) tested below Stockton Dam are located within the U.S. Army Corps of Engineers slough easement. While portions of these sites within the U.S. Army Corps of Engineers easement do not contain significant deposits, further testing will be required within the portions of these sites outside the government easement to ascertain their National Register status. No further work is recommended for these sites at this time.

The U.S. Army Corps of Engineers contracted with Environmental Systems Analysis, Inc. for this Downstream Stockton Study and may not necessarily agree with the contents of this report in its entirety. The report reflects the professional views of the contractor who is responsible for the collection of data, analysis, conclusions and recommendations.

The contractor designated a study team to make the investigation and the study team has drawn conclusions regarding the effects of power generation on the Sac River downstream of Stockton Dam. Since the U.S. Army Corps of Engineers does not wish to interfere with the professional independence of the study team, those conclusions remain in the study. However, it should be noted that the U.S. Army Corps of Engineers does not necessarily agree with the conclusion of the study team regarding the effects of power generation.

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I. INTRODUCTION

Larry J. Schmits

Stockton Lake is a flood control and power generation project located in southwestern Missouri and operated by the U.S. Army Corps of Engineers, Kansas City District (Figure 1). More than two decades of archaeological research have indicated the potential of the Stockton Lake area to produce significant cultural resources related to the prehistory of southwestern Missouri. The cultural resources below Stockton Dam have been only partially inventoried. In order to provide compliance with Executive Order 11593, entitled "Protection and Enhancement of the Cultural Environment," and the National Historic Preservation Act of 1966 (Public Law 89-665) the U.S. Army Corps of Engineers contracted with Environmental Systems Analysis, Inc. for a program of archaeological survey and testing below Stockton Dam.

The present study consisted of a literature review, an intensive pedestrian survey and National Register site testing of approximately 148 ac of slough easements along with National Register testing at 23CE52, 23CE226, 23CE227, 23CE229, 23CE230, 23CE238, 23CE239, 23CE242, 23CE245, 23CE253, 23CE258, 23CE262 and 23CE263. The survey provided specific information on the number of prehistoric and historic archaeological resources present within the survey area, their scientific importance and National Register status. The testing at the 13 sites listed above also provided sufficient information to determine whether these sites are eligible for the National Register.

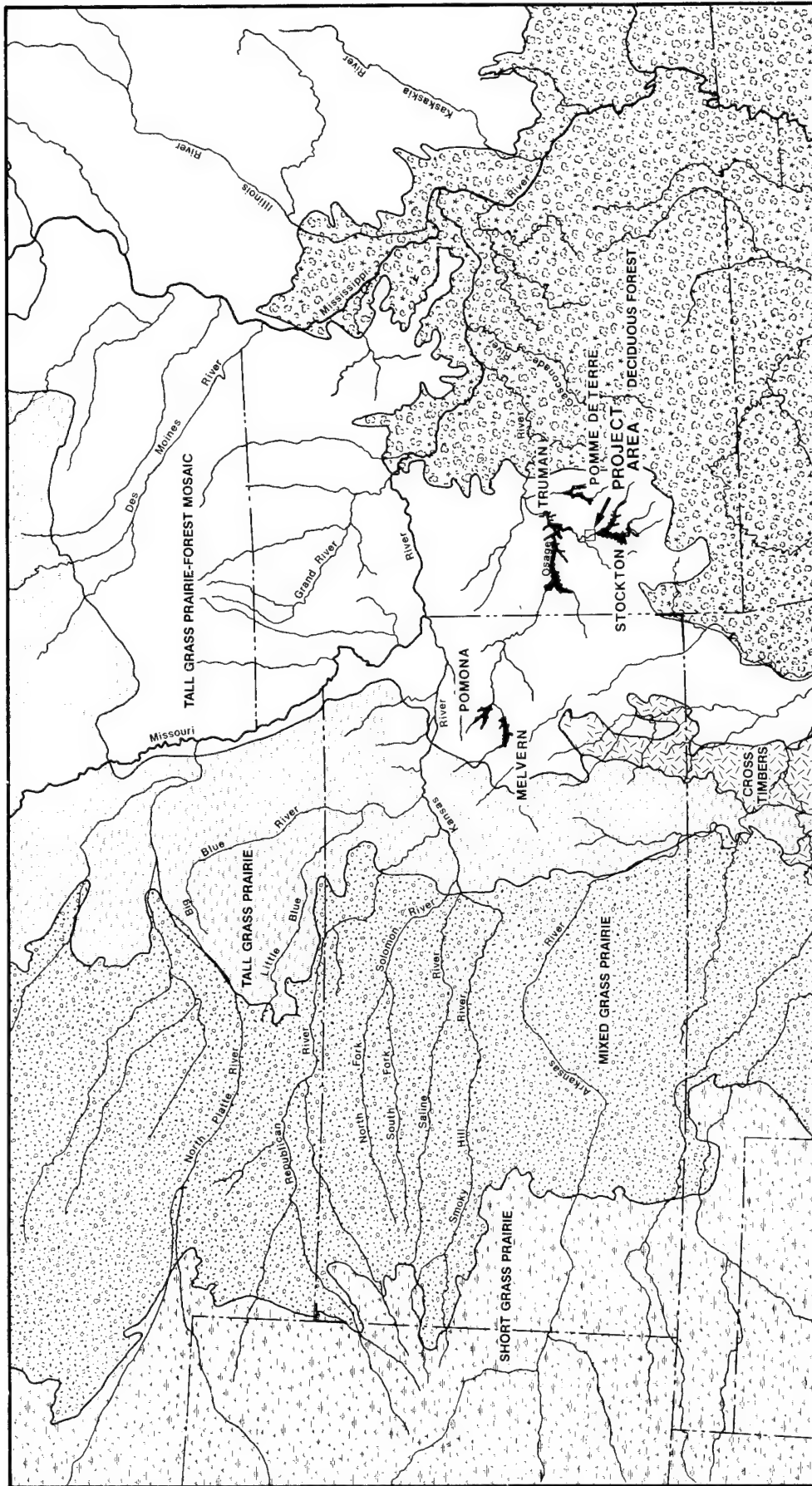


Figure 1. Location of Downstream Stockton Project area in Southwest Missouri.

II. ENVIRONMENTAL SETTING

John M. Parisi

The Downstream Stockton Project area is located in north-central Cedar County just below Stockton Dam and the confluence of the Little Sac and Sac Rivers in the Upper Osage drainage basin (Figure 1). The Project Area consists of government easements which could be affected by sloughing and is limited to the lowlands located on the U.S.G.S. 7.5' Stockton, Bear Creek and Caplinger Mills quadrangles. It is bounded to the north by the town of Caplinger Mills and to the south by Stockton Dam. Almost 26.5 km of the Sac River and 1.8 km of Bear Creek are included in the area.

PHYSIOGRAPHY

Physiographically, the project area lies within the Springfield Plateau that grades into the Ozark or Salem Plateau in the eastern portion of Polk County. These two physiographic divisions are separated by the northeast-facing Eureka Springs Escarpment, which averages 100 ft in height in southeastern Polk County. The Eureka Springs Escarpment consists of Mississippian age limestones overlying and underlying 60 to 75 ft of siltstone and shale. The Springfield Plateau consists of an undulating to rolling plain underlain primarily by Mississippian age cherty limestone formations. The undulating to very hilly Ozark Plateau is underlain by Ordovician age formations of cherty dolomite (Hughes 1982).

The Salem Plateau exhibits a rugged topography consisting of narrow, sharply dissected stream divides, deep valleys and abundant outcrops of the underlying bedrock. Soils are agriculturally poor and tend to be shallow and rocky. Upland and valley vegetation is dominated by hardwood and pine forests and prairies are limited to broad upland summits. These characteristics are associated with a mature stage of fluvial erosional development. The Springfield plateau is less dissected than the Salem Plateau and exhibits broader upland divides and narrow less deeply entrenched stream valleys more characteristic of younger terrain. The deeper and more fertile uplands soils generally formed under prairie vegetation while soils along streams and rivers were forested (Branson 1944; Benn 1982). The project area is located at the eastern edge of the Springfield plateau.

Surface features of the project area are primarily a result of differential weathering and erosion of the underlying bedrock. During the Mesozoic and Cenozoic eras, the original bedrock units were decomposed by a combination of physical and chemical weathering into a residuum consisting of sands, silts, secondary clays and more resistant

rocks and minerals. This residuum occurs as a thick layer on gentle slopes and as a thinner layer on steeper slopes where it has been removed by erosion. Thinning of the residuum exposed outcrops of bedrock along the steeper side slopes and resulted in the accumulation of unconsolidated debris within the valleys. Outcrops of Mississippian age Keokuk, Burlington, Chouteau and Reeds Spring limestone and chert formations are most common in the project area (Ray 1984). The Ordovician age Jefferson City formation outcrops primarily to the east of the project area, except for a small area immediately below Stockton Dam. Chouteau and Burlington limestones and cherts form the majority of the valley wall within the remainder of the project area (Perttula and Purrington 1983).

CLIMATE

The climate of the project area, classified as Humid Continental, is characterized by a large annual temperature range and extremes in precipitation (Moxom 1941; Rafferty 1982). The winters are usually fairly short and cold and the summers are long and hot. Modern published soil surveys are not available for Cedar, Polk or Dade counties and climate figures for Cedar County were specifically not available. The mean annual temperature for a 25 year record (1951-1975) at Springfield, Missouri, 35 km to the southwest, is 55.9°F (13.28°C) (Hughes 1982). In winter, the average temperature is 35°F (1.7°C), the average daily minimum temperature is 24°F (-4.4°C). The average summer temperature is 76°F (14.4°C), and the average daily maximum temperature during the summer is 87°F (30.6°C) (Hughes 1982:2). Descriptive summaries for the Springfield weather station show January and July as the coldest and warmest months, respectively.

The mean annual precipitation for a 25 year period (1951-1975) at Springfield is 39.74 in (100.94 cm). The precipitation within the study area is fairly evenly distributed throughout the year with most occurring in the late spring through early fall. This period of maximum precipitation is largely a result of frontal activity. Maritime polar (mP) and continental (cP) air masses that flow into southwestern Missouri during the late spring and summer usually coverge with warm, moist maritime tropical (mT) air that is flowing north from the Gulf of Mexico. The overrunning of mP and cP air by warmer mT air often produces intense rainfalls of short duration along the zone of convergence. Convective thunderstorms in the summer also produce heavy rainfalls. The heaviest one-day rainfall during the period of record at Springfield was 4.82 in (12.24 cm) on June 9, 1975 (Hughes 1982:2).

Winter is a relatively dry period in southwestern Missouri. Precipitation generally averages between 1.64 to 2.68 in (4.17 to 6.81 cm) per month during this season. The mean annual snowfall for the period 1951 to 1975 at Springfield is 14 in (35.56 cm). Snowfall is greatest in February and March with monthly averages of 4.0 in (10.16 cm) and 4.5 (11.43 cm) respectively. The greatest snowfall of record within this period was 17 in (43.18 cm) (Hughes 1982:2).

Missouri lies in the zone of the prevailing westerlies. Cyclonic frontal cells associated with invading Pacific air masses are largely responsible for the short term (daily and weekly) changes that affect weather. The weather patterns are basically those described by Borchert (1950) for his Climatic Region IV, the wedge shaped mid-continent area of tall grass prairie, often called the Prairie Peninsula. The major characteristics for the region are: 1) low winter rainfall and snowfall; 2) occasional summer droughts with a tendency for major summer droughts to occur synchronously within the region; 3) a continental source and trajectory of the mean air-stream which blankets the region during dry periods, and 4) dominance of moist maritime tropical air from the Gulf of Mexico during the summer.

Severe, long-term droughts in southwestern Missouri can have tremendous ecological effects on ecotones. Since droughts tend to favor grasses over arboreal species, there is a tendency for a forest-prairie border, such as the one in the region, to shift, with grasslands expanding and contracting in response to the fluctuating climate (McMillan 1976a).

SOILS

The present day soils of the project area consist of the Hartville-Ashton-Cedargap-Nolin association of deep, nearly level to gently sloping, somewhat poorly drained to somewhat excessively drained soils on loamy bottomlands (Allgood and Persinger 1979). Hartfield soils formed in alluvium on nearly level to sloping terraces and range in slope from 0 to 8 percent. Ashton soils are deep, well drained and formed in silty alluvium on low, occasionally flooded, stream terraces with slopes of 0 to 6 percent. Cedargap consists of a deep, well or excessively drained soil formed in silty and cherty alluvium on floodplains, with slopes of 0 to 3 percent. Nolin is a deep, well drained soil formed in silty alluvium on low, nearly level floodplains with slopes ranging from 0 to 4 percent. These soils are classified as forest alfisols. Evidence from the Montgomery site (23CE261) within the project area, documents that cultural material may be buried from depths of 3 to 4 m below the surface in these Holocene alluvial soils.

BIOTIC RESOURCES

The native vegetation and associated fauna of the Springfield and Salem plateaus differ quantitatively but not qualitatively. Benn (1982) divided the upper portions of the Little Sac drainage into six major vegetation associations based on the work of Steyermark (1963), Pope (1977) and McMillan (1976a), as well as on information provided in the original land survey plats and modern botanical analysis. The associations include: (1) the sugar maple-bitternut hickory association located on the floodplain and low terraces of larger stream valleys; (2)

the sugar maple-white oak association located on the higher terraces and slopes of these larger valleys; (3) the white oak-red maple association occurring in the smaller stream valleys; and (4-6) the oak-hickory, oak-barrens and prairie associations located on the upland divides (Table 1).

Plant species present along the floodplains and low terraces of the larger river and stream valleys include Ward's willow, American sycamore, ragweed, sedges, tick trefoil, sparges, common buttonbush, black willow, silver maple, green ash, elm, sugar maple, bitternut hickory, pawpaw, American hornbeam, flowering dogwood, spice bush, greenbrier and buck brush. Also included were a large variety of herbs such as ironweed, hog peanut, wild ginger, wood mint, Joe-Pye weed, jewel weed, blue phlox, Virginia creeper, violets and bloodroot. Moving further away from the rivers and larger streams onto the higher terraces and valley slopes species such as fragrant sumac, red cedar, persimmon and many prairie herbs are found on the dryer south and west facing slopes. With deeper soil and improved moisture, species such as greenbrier, supple-jack, hawthorn, hackberry, sugarberry, white ash, chinkapin oak, blue ash, hop hornbeam, and slippery elm occur. On the more mesic east and north slopes, sugar maple, white oak, northern red oak, linden, butternut, flowering dogwood, spice bush and bladder-nut are present (Benn 1982).

The white oak-red maple association occurs within small intermittent stream valleys, protected ravines, and wetter upper hillslopes. The vegetation may consist of flowering dogwood, blackgum, witch-hazel, sassafras, mockernut hickory, smooth sumac, winged elm, serviceberry, white oak, scarlet oak, black oak, butternut and red maple depending on the location and stage of climax development (Benn 1982).

Plant associations within the uplands include the oak-hickory forest, oak barrens and tall grass prairie. Tree species occurring within these associations include black oak, white oak, post oak, black hickory and shagbark hickory. Forbs and shrubs include lowbush blueberry, deerberry, rough goldenrod, summer grape, fragrant sumac, winged sumac, sassafras, oats grass, cinquefoil, sedges, asters, big and little bluestem grasses, switch grass, Indian grass, prairie cord grass, sideoats, grama grass, panic grass, spike rush, prairie anemone, meadow beauty, composites (e.g. sunflower, rosinweed, blazing star, asters, coneflowers), and legumes (e.g. lead plant, false indigo, prairie clovers, tick trefoil, lespedeza, milk pea) (Benn 1982).

Benn (1982) has related the fauna present in the native project area prior to Euroamerican settlement to a generalized version of the vegetation communities summarized above (Table 2). They consist of the prairie, upland forest and bottomland forest-riparian communities (Schwartz and Schwartz 1959). Included among prairie species are wapiti (elk), bison, coyote, red and gray fox, spotted and striped skunk, badger, woodchuck, black-tailed jackrabbit, thirteen-lined ground squirrel, pocket gopher, prairie white-footed and meadow mice, southern bog lemming, three-toed and ornate box turtles, western slender glass lizard, Midland brown, hognose, prairie king, bull and various other snakes, northern bobwhite, red-tailed hawk and kestrel, prairie chicken and various owls (Benn 1982).

Table 1. Potential native flora of the project area.*

SPECIES	FLOODPLAIN AND LOW TERRACES	HIGH TERRACES AND SLOPES	SMALL STREAM VALLEYS	UPLANDS
TREES				
ash	x			
blue ash		x		
green ash	x			
white ash		x		
blackgum			x	
butternut		x	x	
red cedar		x		
flowering dogwood	x	x	x	
elm	x			
slippery elm	x			
winged elm			x	
hackberry		x		
sugarberry		x		
hawthorn		x		
bitternut hickory	x			
black hickory				x
mockernut hickory			x	
shagbark hickory				x
American hornbeam	x			x
hop hornbeam		x		
linden		x		
red maple			x	
silver maple	x			
sugar maple	x	x		
black oak			x	x
blackjack oak				x
chinkapin oak		x		
northern red oak		x		
post oak				x
scarlet oak			x	
white oak		x	x	x
pawpaw	x			
sassafras	x		x	x
black willow	x			
Ward's willow	x			
SHRUBS				
buck brush	x			
common buttonbush	x			
bladdernut		x		
lowbush blueberry				x

continued

Table 1 continued. Potential native flora of the project area.*

SPECIES	FLOODPLAIN AND LOW TERRACES	HIGH TERRACES AND SLOPES	SMALL STREAM VALLEYS	UPLANDS
deerberry				x
false indigo				x
persimmon				x
serviceberry			x	
spice bush	x	x		
fragrant sumac		x		
smooth sumac			x	
winged sumac				x
witch hazel			x	
WOODY VINES				
greenbrier	x	x		
summer grape				x
supple-jack	x			
Virginia creeper	x			
HERBS				
aster				x
blazing star				x
bloodroot	x			
blue phlox	x			
coneflower				x
hog peanut	x			
ironweed	x			
Joe-Pye weed				
jewel weed	x			
lead plant				x
lespedeza				
meadow beauty				x
milk pea				x
prairie anemone				x
prairie clover				x
ragweed	x			
rosinweed			x	
rough goldenrod				x
sedge	x			
spike rush				x
spurge	x			
sunflower				x
tick trefoil	x			
violet	x			
wild ginger	x			
wood mint	x			

continued

Table 1 continued. Potential native flora of the project area.*

SPECIES	FLOODPLAIN AND LOW TERRACES	HIGH TERRACES AND SLOPES	SMALL STREAM VALLEYS	UPLANDS
GRASSES				
big bluestem				x
little bluestem				x
Indian grass				x
panic grass				x
prairie cord grass				x
sideoats				x
grama grass				x
switch grass				x

*Derived from Benn (1982)

Table 2. Potential native fauna of the project area.*

SPECIES	BOTTOMLAND FOREST	UPLAND FOREST	PRAIRIE
MAMMALS			
badger			x
beaver	x		
bobcat		x	
bison			x
black bear		x	
blacktailed jackrabbit			x
eastern cottontail		x	
coyote			x
eastern chipmunk		x	
eastern mole	x		
eastern gray squirrel	x		
eastern fox squirrel		x	
eastern woodrat		x	
gray fox		x	
red fox		x	
pocket gopher	x	x	
mink	x		
meadow mouse			x
pine mouse		x	
prairie white-footed mouse			x
muskrat	x		
opossum		x	
panther		x	

continued

Table 2 continued. Potential native fauna of the project area.

SPECIES	BOTTOMLAND FOREST	UPLAND FOREST	PRAIRIE
raccoon	x		
river otter	x		
southern bog lemming			
spotted skunk			x
striped skunk			x
timber wolf	x		
thirteen-lined ground squirrel			x
wapiti (elk)			x
white-tailed deer		x	
woodchuck		x	x
BIRDS			
northern bobwhite			x
American crow		x	
eagle	x	x	
woodland grouse		x	
redtailed hawk			x
sharp-shinned hawk	x		
kestral			x
blue heron	x		
green backed heron	x		
killdeer	x		
common merganser	x		
hooded merganser	x		
osprey	x		
barred owl	x	x	
great horned owl		x	
downy woodpecker		x	
pileated woodpecker	x		
prairie chicken			x
wild turkey		x	
turkey vulture	x		
wood duck	x		
REPTILES			
northern fence lizard		x	
western slender glass lizard			
six-lined racer		x	
ground skink		x	
black rat snake	x		
bullsnake			x

continued

Table 2 continued. Potential native fauna of the project area.

SPECIES	BOTTOMLAND FOREST	UPLAND FOREST	PRAIRIE
eastern garter snake	x		
great plains ratsnake		x	
hognose snake			x
midland brown snake	x		
northern copperhead		x	
prairie king snake			x
timber rattlesnake		x	
western cottonmouth	x		
map turtle	x		
Mississippi mud turtle	x		
Missouri slide turtle	x		
ornate box turtle	x		
Ouachita map turtle	x		
red-eared slider	x		
snapping turtle	x		
soft shell turtle	x		
stinkpot	x		
three-toed box turtle			x
western painted turtle	x		
FISH			
bass	x		
bluegill	x		
channel catfish	x		
flathead catfish	x		
chubs	x		
crappie	x		
darters	x		
freshwater drum	x		
gar	x		
madtom	x		
minnows	x		
shiners	x		
suckers	x		
walleye	x		

*From Benn (1982).

Species primarily adapted to the upland forest but also utilizing the prairie and lowland forest included the eastern fox and southern flying squirrel, eastern woodrat, pine mouse, raccoon, weasel, bobcat, eastern cottontail, woodchuck, white-tailed deer, eastern chipmunk, black bear, timber wolf, panther, opossum, foxes, downy woodpecker, American crow, woodland grouse, wild turkey, eagles, screech, great horned and barred owl, eastern collared and northern fence lizard, six-lined racer, ground skink, Great Plains ratsnake, northern copperhead and timber rattlesnake (Benn 1982).

Bottomland species included animals adapted to the forests occurring primarily on terraces and within the riparian environment along the rivers and streams. In addition to many of the species listed above the bottomland contained eastern mole, eastern gray squirrel, many species of bats, beaver, mink, muskrat, river otter, waterfowl, blue and green-backed herons, killdeer, sandpiper, osprey, sharp-shinned hawk, turkey vulture, pileated woodpecker, common snapping, stinkpot, map, Mississippi mud, red-eared slider, Ouachita map, western painted, Missouri slider and soft shell turtles, western cottonmouth, midland brown, garter and black rat snakes, as well as many toad, salamander and frog species (Benn 1982).

Fish species included gar, shiners, bluegill, bass, chubs, minnows, flathead and channel catfish, crappie, walleye, darters, freshwater drum, suckers, bullhead and madtom. Crayfish and mussels were also present in the clear water streams of the project area (Benn 1982).

III. PREVIOUS ARCHAEOLOGICAL INVESTIGATIONS BELOW STOCKTON LAKE

John M. Parisi

Previous archaeological investigations within the Stockton Lake project area have been conducted by several organizations including the University of Missouri, Southwest Missouri State University, American Resources Group and Espey Huston and Associates, Inc. In addition to this work, amateur archaeologists have contributed significantly to the present knowledge of the archaeology of the study area. With completion of the 1985 survey below Stockton Dam, a total of 79 sites have been recorded within the Downstream Stockton Study Area with 41 sites located on the government sloughing easements and 38 sites in the immediate vicinity (Collins et al. 1983; Klinger et al. 1984; Moffat and Houston 1986; Perttula and Purrington 1983; Roper 1977).

Prior to Roper's (1977) survey of the Downstream Stockton Area, only 10 archaeological sites were recorded in the project area. None of those sites had been professionally investigated or described in a report or manuscript (Roper 1977). Roper's survey was conducted in the spring of 1976 under generally optimal conditions and resulted in the documentation of 44 archaeological sites. Four of the sites were previously recorded and the rest were newly discovered. Cultural affiliations were determined for a limited number of the sites based solely on the recovery of diagnostic artifacts, particularly projectile points. One Dalton, six Middle Archaic, eight Late Archaic and 15 Woodland components were reported as a result of this survey.

The Dalton component was encountered at the Montgomery site (23CE261) which consisted of a buried cultural level eroding out of a riverbank of the Sac River. Limited test excavations were conducted at the site in 1976 resulting in the delineation of the vertical content of the cultural deposit and the length of its exposure along the Sac riverbank. Cultural material was encountered between 2.55 and 3.4 m below surface within a well developed soil horizon, identified as Rogers Alluvium, estimated to date between 11,000 and 6,000 years B.P. (Collins et al. 1983). Two Dalton points were recovered in situ within the cutbank profile. A radiocarbon date of 9800 years B.P. was obtained near the base of the Rogers Alluvium at 4.7 m below surface but is not associated with the cultural material (Donohue 1983). The Dalton component probably dates around 9000 years B.P. based on the depth of the deposit and typological comparisons with other Dalton sites in Missouri. Charles D. Collins recovered a large collection of Paleo-Indian, Dalton, Early Archaic and Middle Archaic points from the Montgomery site locality indicating that multiple overlapping occupations are represented. 23CE261 was placed on the National Register of Historic Places in September of 1981 and has been preserved largely through the efforts of a local landowner, Clark I. Montgomery, who constructed a dike and rerouted the channel of the Sac River to avoid further destruction of the site.

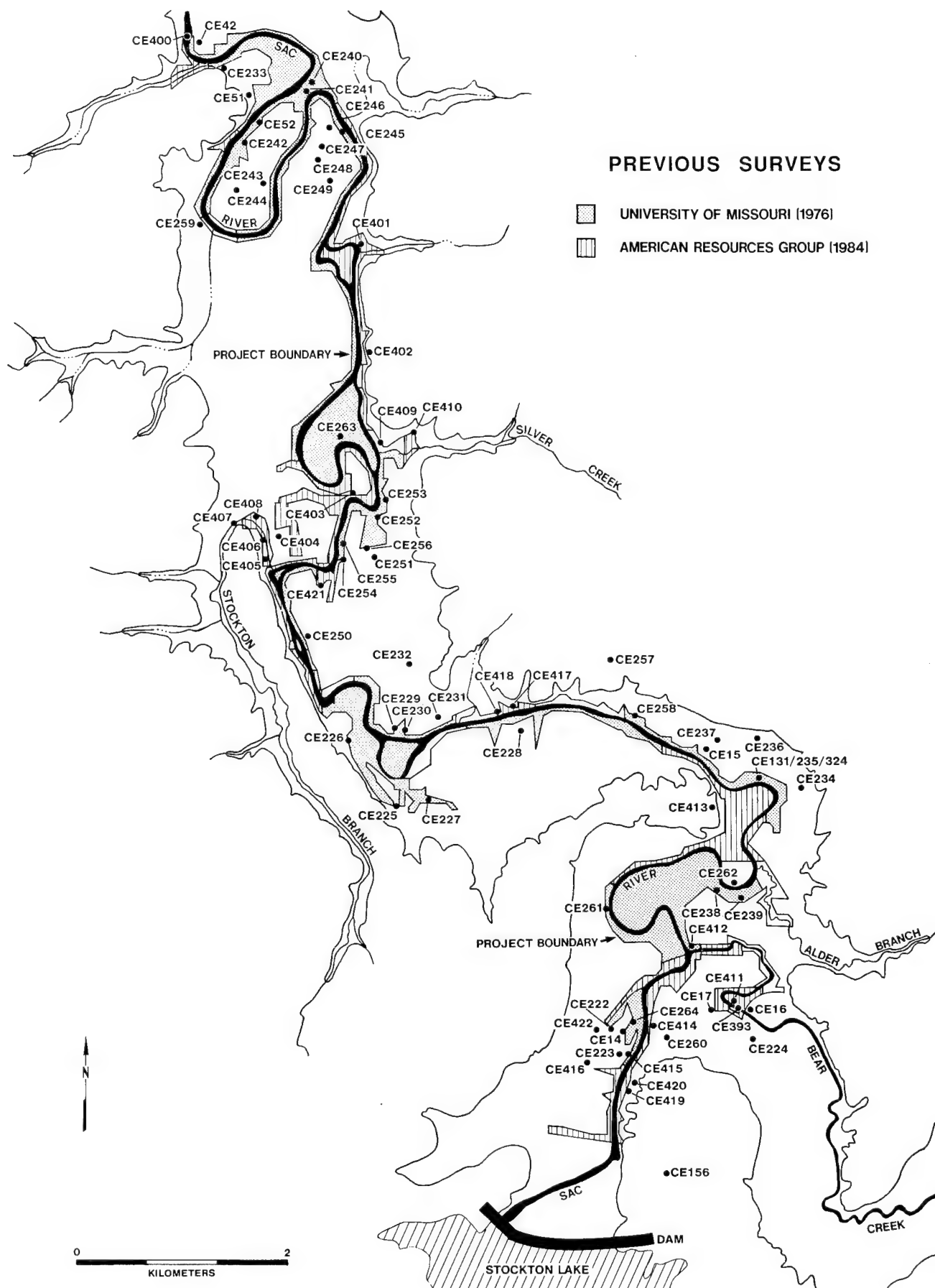


Figure 2. Location of previous surveys and previously recorded sites at Stockton Lake.

Phase II archaeological test excavations were conducted in 1981 and 1982 at sites 23CE235, 23CE324, 23CE252, 23CE240 and 23CE242 by Southwest Missouri State University (Perittula and Purrington 1983). Four of these sites were originally reported by Roper (1977) while 23CE324 was a newly reported site. The test excavations at these sites indicated that only 23CE252 has properties which warranted nomination to the National Register of Historic Places. The nomination was based on the potential of the site for answering regionally oriented research questions regarding the use of temporary Woodland occupations in the Ozark Highlands. The other sites were either poorly preserved or lacked substantial intact subsurface archaeological deposits.

Additional survey and test excavations were conducted in 1985 by American Resources Group (Moffat and Houston 1986). This study resulted in the location and testing of 12 new archaeological sites (23CE401, 23CE403, 23CE405, 23CE406, 23CE408, 23CE410, 23CE412, 23CE417, 23CE418, 23CE419, 23CE420, 23CE421) and three previously recorded sites (23CE14, 23CE255 and 23CE256) within the sloughing easement lands along the Sac River. Eleven additional prehistoric sites (23CE223, 23CE402, 23CE404, 23CE405, 23CE407, 23CE409, 23CE411, 23CE413, 23CE414, 23CE416, 23CE422) and one historic mill site (23CE400) were recorded adjacent to the easement boundary. Since these sites were located outside the government easement, they were not evaluated for the National Register. Testing of the 15 sites within the sloughing easement resulted in the determination that nine are eligible for the National Register.

Historical investigations have been conducted in the project area at Owen's Mill and at an alleged Civil War site by Klinger et al. (1984).

Archaeological investigations to the south of Stockton Dam began in the 1940s when excavations were conducted along the Sac River for the purpose of obtaining artifacts for commercial sale by Jimmy Allen of Cody, Wyoming (Nichols et al. 1980). Professional work in the area began with the preliminary reconnaissance of the area to be affected by Stockton Lake by the University of Missouri in 1961. This survey located 40 sites, only nine of which contained ceramics. Most of the sites were multicomponent. Test excavations were conducted at three mounds during that season (Nichols et al. 1980).

Data obtained during excavations conducted between 1962 and 1965 were used to tentatively define the Bolivar Burial complex (Wood 1965, 1966; Wood and Brock 1985). Excavations of nine mounds revealed a general similarity with other burial complexes in southwestern Missouri, such as the Fristoe Burial complex. The Bolivar complex was separated from this complex primarily by the increased quality of the limestone tempered ceramics, and the presence of charred seeds, Cupp points, siltstone pipes, and distinctive bone spatulates (Wood and Brock 1985:116).

An 18 percent survey of three recreation areas along the Little Sac arm of Stockton Lake was conducted in June of 1979 by Espey Houston and Associates, Inc. (Nichols et al. 1980). A total of 280.8 acres were inventoried for prehistoric and historic cultural resources within the

Cedar Ridge, Masters and High Point recreation areas. A total of 14 sites were located, including eight historic and 5 prehistoric sites, as well as one site with both prehistoric and historic components. The report included a preliminary management plan and a predictive model of site locations. In general, the lower the elevation of the setting within the lake area, the higher the probability of site location. Only one of the sites (23P0261) produced a diagnostic artifact and was assigned to the Woodland period. Testing was recommended at 23P0261 and 23P0262, both prehistoric sites endangered by heavy public use. Historic sites considered significant were the Richard Hartley Housesite (23CE314) and the possible Fox Housesite (23CE315) which may represent the oldest homesite in the area. Six other potential house sites and a possible cemetery were recommended as potentially significant historic sites in the Stockton Lake area (Nichols et al. 1980).

IV. CULTURAL OVERVIEW OF SOUTHWEST MISSOURI

John M. Parisi

The archaeology of Missouri has generally been interpreted on the basis of investigations in the western part of the state in the Kansas City area (Johnson 1974), in the northeastern portion of the state (Logan 1952; Klippel 1971; Shippee 1957, 1966; O'Brien and Warren 1979) and in the Ozark Highlands (McMillan 1976b; Kay 1982a, 1982b; Roper 1981). Chapman's (1975, 1980) synthesis of Missouri archaeology provides a discussion of much of the available information for southwestern Missouri. Chapman's synthesis is supplemented with more recent work and with specific substantive studies conducted in the Osage Prairie Management Unit. Most of the following discussion of the culture history is based on the results of investigations in the Truman Reservoir approximately 50 km north of the project area (McMillan 1976b; Kay 1982a; Roper 1981), from investigations conducted along the James River approximately 60 km south (Douthit 1981) and from various testing and excavation projects conducted in Cedar County (Collins et al. 1983; Moffat and Huston 1986; Nichols et al. 1980; Perttula and Purrington 1983; Wood and Brock 1985).

Paleo-Indian Period (14,000-10,000 B.P.)

The Paleo-Indian Period is a complex of North American hunting cultures defined largely on the basis of variable projectile (or spear) point types such as Clovis, Sandia, Folsom, Midland, Agate Basin, Plainview, Angostura, Hell Gap, Cody (Eden, Scottsbluff, Alberta) and Frederick projectile points (Frison 1978; Willey and Phillips 1958).

For most of the early period, wet luxuriant vegetation supported large herds of herbivores such as extinct species of mammoth and bison. The North American climate was ideally suited for a hunting adaptation. Big game hunting of mammoth and other large herbivores was the dominant subsistence adaptation. These hunting cultures were first found in the western part of North America (especially the High Plains and American Southwest).

Within Missouri, evidence for the Paleo-Indian stage is scarce. The Kimmswick Clovis-Mastodon site has yielded Clovis points and other Llano complex stone tools in good geologic context with the bones of American mastodon (Mammut americanum) (Graham 1979). Rodgers Shelter's lower level has radiocarbon dates within the latter part of the Paleo-Indian period (McMillan 1971). For the most part, however, evidence for the Paleo-Indian period in Missouri is restricted to isolated finds of fluted projectile points.

In general, the Paleo-Indian period is poorly known for this portion of Missouri. Chapman (1975:67) reports the presence of one

fluted form found in Cedar County. As the locations of most finds have been at hilltop sites, it has been suggested that Paleo-Indians were highly mobile groups who established temporary camps on hilltop overlooks (Shippee 1964; Chapman 1975). Chapman (1975:67) also suggests that Paleo-Indian groups may have occupied lowland terraces and floodplains but that such sites may have been destroyed by early Holocene erosion.

Dalton Period (10,000-9000 B.P.)

Chapman (1975) refers to the Dalton period as a transitional period between the Paleo-Indian and the Archaic cultures at about 8000-7000 B.C. There is a change from big game hunting to hunting-foraging which occurred as the climate returned to warmer, post-glacial conditions.

The Dalton period is characterized by Dalton points of which the two most diagnostic are the Dalton Serrated and the Dalton Lanceolate forms (Chapman 1975). Overall the material culture from the Dalton period has a much broader range of artifact classes compared to the earlier Paleo-Indian period. Tools associated with plant food processing such as mortars, manos, grinding slabs, cupstones and hammerstones make their first appearances. Other items not seen in earlier contexts include bone needles and awls.

Faunal evidence from Graham Cave in east central Missouri indicates a dependence on cottontail, raccoon and squirrel (Klippel 1971). The only large mammal present in the Dalton level was deer. Collecting nuts, berries and seeds were probably important parts of the Dalton subsistence, as indicated by tools associated with such activity.

Dalton sites and Dalton point find-spots appear to be associated mainly with the Ozark Highland in Missouri. At Table Rock Lake, the Rice and Standlee shelters yielded Dalton Serrated points mixed with Archaic materials. On the Current and Eleven Point rivers, Dalton Serrated have been found on the surface (Bray 1956, 1960).

The Dalton component at Rodgers Shelter consists of a series of brief transient occupations probably by small bands. During the Dalton occupation there is evidence that forest-edge species dominated the floral and faunal record (McMillan 1976b). There is no strong comparative data for the cultural changes that occur between pre-Dalton and Dalton occupations at Rodgers Shelter. However, data from later occupations at that site point to a good correlation between a changing environment and changes in material culture and settlement type (Wood and McMillan 1976). It is possible that the increased diversity observed in Dalton period material culture, as compared to Paleo-Indian assemblages, may be partially explained by environmental changes.

Another important Dalton occupation in southwest Missouri is at the Montgomery site (23CE261) located in the project area (Collins et al. 1983). The site is buried in a Holocene alluvial deposit at a depth of 3.3 m below surface and consists in part of multiple small (10-15 m in

diameter) overlapping occupation areas. Large scale salvage excavations have not been conducted at the Montgomery site. However, data from limited testing activities and local collectors indicate that the Dalton deposits are fairly extensive.

Studies in Arkansas provide a more detailed picture of Dalton lifeways. A Dalton cemetery located during the Cache River Archaeological Project (Schiffer and House 1975) contained marked graves, caches of Dalton points and point preforms, in addition to Dalton adzes, endscrapers, backed unifaces, gravers, abraders and cobble tools (Morse 1975). Data from this cemetery has been used by Morse (1975) as partial evidence for the presence of small, stable bands living in rather specific territories in northeast Arkansas. Although Schiffer and House (1975) argue that small bands roamed variously and at will in order to schedule their resources, Morse (1977) further argues for the presence of six hunting bands in northeast Arkansas, each occupying distinct watersheds.

Early Archaic Period (9000-7000 B.P.)

According to Chapman (1975:127-128) a more xeric environment over much of the midwest necessitated a much more diversified subsistence economy during the Early Archaic period. Hunters and gatherers were more locally adapted to specialized ecological niches. Rather than following large migratory herds of animals, hunting and gathering campsites and stations became more localized and defined home range and hunting territories characterized the settlement pattern. Local group size was still small but exploitation of locally abundant wild resources undoubtedly allowed occasional semisedentism (Chapman 1975:127-157)

The absence of fluted point forms largely distinguished the Early Archaic period from the preceeding Dalton period. Non-fluted point forms which occur in the Dalton period persisted into the Early Archaic including Graham Cave Notched and Dalton Serrated forms (Klippel 1971; Chapman 1975). Additional styles which are characteristic of the Early Archaic in Missouri include Hidden Valley Stemmed, Rice Lobed, Rice Contracting Stemmed, Rice Lanceolates and St. Charles Notched.

In southwest Missouri there is little substantive data for Early Archaic period sites or complexes but most of what is known comes from the Ozark Highland. Components at three sites (Jakie Shelter, the Rice site and Standlee Shelter) in the Table Rock Lake area were assigned to the Early Archaic Rice complex. This complex is identified through several types of points and knives including Dalton Serrated, Graham Cave Notched, Agate Basin Lanceolate, Rice Lanceolate, Rice Contracting Stemmed and Rice Lobed. A variety of stemmed and unstemmed scrapers are part of the complex's tool kit as are adzes, choppers and anvilstones (cf. Bray 1956, 1960; Marshall and Chapman 1960). East of the Table Rock Lake area, in Ozark County, Dalton Serrated and Rice Lanceolate forms were found at Hurricane Hollow in the Little North Fork Branch of the White River (Tong 1955). A number of Early Archaic points have been recovered from the Montgomery site (23CE261) in the project area (Collins et al. 1983). These include Graham Cave Notched and Hardin

Barbed varieties.

There is little evidence for human occupation at Rodgers Shelter between 9500 and 8600 years B.P. (McMillan 1976b). However, occupation resumed ca. 8600 years B.P. McMillan (1976b) recognized this as a Middle Archaic occupation that lasted until about 7000 years B.P., but which technically falls within Chapman's (1975) Early Archaic period. The renewed occupation of Rodgers Shelter resulted in the preservation of several types of important information. During this time, the shelter served as a base camp for a wide range of subsistence activities with plant processing and tool production being especially important. Faunal evidence indicates a pattern of procuring prairie-dwelling bison and squirrel from the forests (McMillan 1976b). At about 8000 years B.P., it is believed that the Prairie Peninsula began to encroach on the upland forest-edge environment that once surrounded the shelter (McMillan and Wood 1976).

Middle Archaic Period (7000-4500 B.P.)

The Middle Archaic period is considered to extend from 7000-4500 years B.P. Middle Archaic adaptations are characterized by even broader diversification in subsistence activities due to an even drier, more xeric environmental-climatic regime that caused widespread erosion. Local group size remained small and the settlement pattern remained much as it was in the Early Archaic period (Chapman 1975:158-183).

Lithic technology changed noticeably. A medium sized, frequently heat treated, side notched point is the most commonly found projectile point. Diagnostic Middle Archaic points include Big Sandy Notched, Jakie Stemmed, Rice Lobed, Table Rock Stemmed and Smith Basal Notched.

A new or much more frequently found artifact is the full-grooved ax or celt. Other typical Middle Archaic artifacts include twined fiber fabrics, bone and shell ornaments, bone and antler tools, and engraved bone pins. Chapman (1975:174-182) suggests that Middle Archaic peoples were widely distributed from Missouri to Indiana, using similar tool kits while adapting to similar prairie peninsula environments.

Paleoenvironmental studies have documented shifts in human settlement and/or subsistence practices that correspond to the Hypsithermal interval. The best example from southwest Missouri comes from Rodgers Shelter on the Pomme de Terre River drainage. It was determined that the shelter was completely abandoned by 5100 years B.P. and that settlements were probably concentrated in central valley locations near perennial streams ca. 6300-5100 years B.P. The onset of the Hypsithermal is noted by an increase of prairie species in the faunal assemblages at Rodgers Shelter. As an example, a notable decrease in deer remains is seen as opposed to increases in small animals such as birds, fish and rabbit. The decrease in deer is probably due to the reduction of forest-edge habitats by the drought (Kay 1982a).

A series of Middle Archaic Rice Lobed and Big Sandy Side Notched

points were recovered from the Montgomery site below the Stockton Reservoir Dam (Collins et al. 1983). Many of these points were collected from the site's eroding river banks, but a few seemed to be superimposed above the Dalton/Early Archaic levels. While this is limited data, it does point to the potential for buried Middle Archaic sites in the project area. Roper (1977) assigned six sites below Stockton Dam to the Middle Archaic period on the basis of surface finds of Etley, Rice Lobed, Big Sandy and Jakie Stemmed points.

To the south of the project area the Middle Archaic White River complex has been defined by Chapman (1975:159-171) from a series of sites along the White River within the Table Rock and Bull Shoals Reservoirs. Artifacts diagnostic of the complex include Big Sandy Notched and Jakie Stemmed points, full grooved axes and celts. Douthit (1981:54,512) found that the Middle Archaic material along the James River south of Springfield generally resembled this complex and that the increased number of sites may indicate a slight population increase.

Late Archaic Period (4500-3000 B.P.)

The Late Archaic period in Missouri extends from 4500-3000 years B.P. (Chapman 1975). At this time, climatic conditions changed from an arid regime to one which was similar to conditions known today (Chapman 1975; King 1980). The increase in available moisture which followed the Hypsithermal resulted in renewed development and expansion of oak-hickory woodlands (King 1980). Cultural changes are considered to reflect adaptation to an increased number of available ecological niches brought about by more mesic conditions. Hunting and gathering remained the dominant subsistence strategy, but, because of the greater types of local resources, Late Archaic tool kits expanded in range and complexity, particularly among tools associated with plant food processing. Intensified plant utilization may have laid the foundation for incipient horticulture and agriculture (Chapman 1975).

In southwest Missouri the Late Archaic period is characterized by an increased density of sites indicating a population increase (Benn and Fuller 1982:123; Chapman 1975) or a possible migration into the Ozark Highlands from central Missouri and northeast Oklahoma (Douthit 1981:54; Chapman 1975:185). To the south of the project area, Chapman (1975) has described the James River complex on the basis of four components located in the Table Rock Lake area along the White River Drainage. Diagnostic projectile points included Table Rock Stemmed, Afton Corner Notched, Stone Square Stemmed and Smith Basal Notched. Other tools of the complex are triangular bifaces, chipped-stone axes, hafted drills, chert hammerstones, manos and anvils.

In the Truman Reservoir area Kay (1982b) reported several components of the Late Archaic Sedalia phase at the Phillips Spring site on the Pomme de Terre River. The Sedalia phase is located primarily in central and northeast-central Missouri. Phase traits are numerous and consist of several distinctive types of artifacts including Sedalia Lanceolate, Etley, Smith Basal Notched and Stone Square Stemmed points as well as Clear Fork Gouges and Sedalia Diggers. Ground stone tools

such as grooved and ungrooved axes and manos are frequent (Chapman 1980).

One of the Sedalia phase components at Phillips Spring yielded seeds from bottle gourd (Lagenaria siceraria) and squash (Cucurbita pepo) (Chomko 1978; Kay 1982b). This information points to the domestication of tropical cultigens by about 4500 years B.P.. on the western edge of the Ozark Highland (Kay 1982b). It is likely, however, that subsistence was most heavily dependent on local undomesticated flora and fauna.

Roper (1977) recorded eight sites below Stockton Dam in the Sac River valley with Late Archaic components. None of these sites were radiocarbon dated and the assessment of their cultural affiliation was based on the recovery of projectile points including Table Rock Stemmed, Stone Square Stemmed, Smith Basal Notched, and a variety of corner-notched forms.

Woodland Period (3000 -1000 B.P.)

It has been noted by a number of researchers in southwest Missouri that the subdivision of the Woodland period into Early (3000-2500 years B.P.), Middle (500 B.C.-A.D. 400) and Late (A.D.400-900) Woodland time periods (Chapman 1980) is not particularly useful within the Ozark Highlands (Benn and Fuller 1982:126; Douthit 1981; Roper 1981). In general, the Woodland was a period of increasing sedentism, increasingly restricted hunting territories, increased population, and increasing dependence upon cultigens. The Early Woodland has traditionally been characterized by the appearance of ceramics, horticulture, and burial mounds. It should be noted, however, that ceramics, burial mounds, and horticulture are also found in Late Archaic contexts (Reid 1983; Kay 1983).

In southwest Missouri, the Archaic hunting and gathering economy persisted through the Early Woodland period (Douthit 1981; Roper 1981). There is no good evidence of the widespread use of agriculture at this time in Missouri, although agriculture was beginning to be practiced in other areas of eastern North America (Chapman 1980; Johnson 1974). Goldburg (1981:13) has noted that there is virtually no evidence for a major cultural break between the Late Archaic and Early Woodland periods in southwest Missouri and that the concept of Early Woodland may be artificially conceived and inappropriate for the region. Recent excavations at the Little Green Heron site (23GR535) near the headwaters of the Little Sac River tend to support this view. Two separate Late Archaic components were radiocarbon dated at the site at 2950 and 2350 years B.P. (Parisi 1985).

In the Truman Reservoir one component at Boney Springs has been assigned to the Early Woodland period (King and McMillian 1975). However the radiocarbon date of 1920 years B.P., corner-notched points and limestone tempered ceramics are more indicative of a Middle Woodland cultural affiliation (Roper 1981). Chapman (1980:9) suggests that one site in the Table Rock Reservoir with thick, cord marked pottery might

be Early Woodland, but most sites in the area are not associated with ceramics.

The Middle Woodland was an impressive period of cultural development and complexity in eastern North America (Willey and Phillips 1958:158-162; Struever 1972; Chapman 1980:21). Pottery, maize agriculture, mound building, elaborate stylistic and decorative techniques (in carved stone effigy pipes, ceramics, lithics, copper, sheet mica, marine shell), all appeared rapidly in much of eastern and midwestern North America. Struever (1972) coined the term "Hopewell Interaction Sphere" for this broad regional exchange system.

In the Hopewell Interaction Sphere centers, subsistence was based on maize agriculture, intensive harvesting of wild plant foods and hunting. This intensive and dependable subsistence base led to a rapid population increase. Concurrent with the population increase is an elaboration of ceremonialism and an obvious intensification of Hopewell interregional interaction and trade.

Cooper, a western Hopewell complex, is located in the southwest corner of Missouri and extends into northeastern Oklahoma. Cooper pottery is similar to that from the Kansas City and Big Bend centers of Missouri and points to a distinct relationship between these three areas (Chapman 1980). The Cooper site, according to Baerreis (1953) may have been a frontier outpost of the Hopewellian culture that exploited this area for its extensive chert and herd animal resources. Other links to the Hopewell culture include clay figurines and gorgets.

Goldberg (1981:14) has noted that the few components in the Truman Reservoir area assigned to the Middle Woodland period exhibit minimal Hopewell traits. Douthit (1981:58) reported that the ceramics recovered from the Upper James River drainage cannot be identified as Hopewellian and are not associated with the Cooper Center. Benn and Fuller (1982:128) also note that there was little Hopewellian influence felt within Greene County although artifacts recovered from a burial at the Patterson Springs site in Christian County included Hopewellian trade materials. It appears that the indigenous Middle Woodland population developed largely independent of Hopewell cultural influences and the demise of the Interaction Sphere had little effect within southwest Missouri. However two sites in the Downstream Stockton Project Area, (23CE411 and 23CE417) have been assigned to the Middle Woodland period based on the recovery of characteristic dentate stamped sherds and shallow side-notched Steuben points (Moffat and Houston 1986).

The Late Woodland period in southwestern Missouri is not well understood (Roper 1981). Chapman (1980:91) has postulated that the area was primarily occupied as a hunting and gathering territory by people of the surrounding regions.

Two of the better known Woodland sites in the Stockton Lake area are the Flycatcher and Dryocopus sites. Three structures represented by oval or semicircular postmold patterns were excavated at the Flycatcher site (Pangborn, Ward and Wood 1971). Pits and hearths were located between the houses. Ceramics were not present at the site and the

projectile point assemblage consists of a homogeneous collection of Gary dart points. Two dates of 1235 ± 95 years B.P. and 20 ± 100 years B.P. were obtained from the site, although the investigators suggest that the site dates to the tenth century A.D.

The Dryocopus site contained four structures similar to those found at Flycatcher with features and hearths located between houses (Calabrese et al. 1969). A similar late date of A.D. 465 ± 100 years B.P. was obtained from the site. The projectile points consist of dart points including corner-notched expanding forms and straight based contracting-stemmed Langtry points. Despite the differences in point assemblages, Calabrese et al. (1969) suggest that Dryocopus and Flycatcher are roughly contemporaneous and relate to a single cultural complex.

The Lindley phase is the most westerly expression of the Late Woodland in the Ozark Highland and is located primarily along the central Pomme de Terre drainage and possibly extends into the Sac and Niangua drainages (McMillan 1965). Diagnostic Lindley phase artifacts include Rice Side Notched, Gary and Langtry contracting-stemmed dart points and multiple arrowpoint styles such as Scallorn, Mississippi Triangular, Cahokia Notched and Huffaker Notched (Wood 1961). Ceramics consist of thick, poorly fired, limestone tempered wares. Large base camp sites are located mostly on major stream terraces and are probably the result of repeated overlapping occupations. Other Lindley phase occupations are found in rock shelters such as a short-term hunting and fishing encampment at Rodgers Shelter (McMillan 1976b). Also found along stream terraces are single-occupation base camps and short-term special purpose camps. Moffat and Houston (1986) assigned site 23CE119, located below Stockton Dam, to the Lindley phase on the basis of limestone tempered ceramics recovered from the site.

A cultural manifestation closely related to the Lindley phase is the Meramec Springs phase. The phase appears to be centered in Pulaski, Phelps, Maries and Crawford counties in the upper Meramec and central Gasconade drainages. However, sites which are probably related to the phase are found to the west in Camden and Dallas counties; south in Texas, Wright and Dent counties; east in Washington County; and north in Osage and Cole counties. Therefore, it is likely that it overlaps somewhat with the distribution of Lindley phase sites (Klippel 1965; McMillan 1965).

The Meramec Springs and Lindley phases share many of the same traits, particularly in their lithic assemblages. Their ceramic assemblages are fairly similar as well, but there are some differences which may validate distinguishing between the two complexes. A large majority of Meramec Springs ceramics are limestone tempered, cordmarked wares, whereas Lindley ceramics are limestone tempered and plain surfaced. Another difference is that grit and sherd tempered ceramics are present in Lindley phase assemblages, but not in those of the Meramec Springs phase (Wood 1961; McMillan 1965).

The Fristoe Burial complex (Wood 1967) is located in the same general area as Lindley phase and, although this area is transitional

between the Osage Prairies and Ozark Highland, the phase appears to have closer ties with the latter area (Chapman 1980). It is characterized by rock and earth mounds, mixed ceramic types and exotic items such as shell beads. Lithics include point types found at Lindley and Meramec Springs phase sites. Several of the Fristoe Burial sites date between 1450-950 years B.P. but the presence of European trade goods at some mounds raises questions about the complex's temporal boundaries (Wood 1967; Chapman 1980).

The closely related Boliver Burial Complex is located within the confines of Stockton Reservoir and has tentatively been defined on the basis of excavations at nine burial mounds (Wood 1965; Wood and Brock 1985). The complex is estimated to date between 1050 and 750 years B.P. and is affiliated with the Late Woodland period (Wood and Brock 1985:118).

Roper (1977:90) recognized 15 sites with Woodland components within the project area. Seven of these were assigned to the earlier portion of the Woodland period based on the presence of contracting stemmed Langtry or Gary points and Rice Side Notched points. The remainder include sites with small triangular points including Scallorn, Cahokia and various other types which are assigned to the latter portion of the Woodland period and undoubtedly overlap with the Mississippian occupation of the area. Perttula and Purrington (1983) felt that Roper's subdivision of the Woodland period into early and late temporal stages is not fully warranted since both types of projectile points are often found at the same site in the project area.

Mississippian Period (1000-250 B.P.)

The Mississippian period is generally subdivided into the Early (1050-750 years B.P.), Middle (750-500 years B.P.), and Late (500-250 years B.P.) subperiods (Chapman 1980). After a fairly rapid development Mississippian culture reached a climax during the Middle Mississippian subperiod when large civic-ceremonial centers, such as those at Cahokia and St. Louis, reached their zenith. The later subperiod covers the disintegration of Mississippian culture and overlaps with the protohistoric period. The cultural developments in southwestern Missouri during this period were marginal to those occurring within the heartland of Mississippian culture located in the Mississippi River valley.

There are a few notable outside influences during the Mississippian period in the Ozark Highland. One consists of a Mississippian-like burial at Doyle Cave (23PU40) in the Meramec Springs area which may be related to either the Cahokia phase or Steed-Kisker phase (McMillan 1965). Vista Shelter in St. Clair County on the edge of the Ozark Highland yielded Steed-Kisker traits. Wood (1961) believes that the site may represent a southern hunting camp for the people of that phase.

The Loftin phase is an Early and possibly Middle Mississippian period development in the West White drainage that may represent a blend of local tradition, traits from the Mississippi Valley and traits from the Caddoan area in northeast Oklahoma (Chapman 1980). Local traditions

are seen in the form of Rice Side Notched, Langtry Stemmed, Table Rock Pointed Stemmed, Kings Corner Notched and Crisp Ovate arrowpoints. Each of these types were known prior to the development of the Loftin phase at about 950 years B.P. Easterly influences from the Mississippi valley may include shell tempered pottery that is usually undecorated. Caddoan influences are seen in the form of a definite Caddoan type pottery vessel from a Vaughn site (23SN203) burial in the Table Rock area.

The Pomona focus (Witty 1967, 1981) occupations have been recognized in the Truman Reservoir area by Roper (1981) and consist mainly of rockshelter sites. Roper (1977:25) suggested that Pomona people may have occupied the Downstream Stockton project area. Brown (1985:440) recently redefined Pomona as a variant consisting of the Clinton, Wolf Creek, May Brook and Apple Valley phases. He felt that the Ozark Highlands, including the Downstream Stockton Project Area, was used as hunting territory by the May Brook and Wolf Creek phase Pomona groups.

Protohistoric and Historic Aboriginal

Little is known about the Protohistoric period along the Osage drainage. The most marked cultural development in central Missouri during the Protohistoric period is the Oneota culture (Henning 1970). Oneota culture was principally centered along the lower Missouri River to the north and northeast of the Osage drainage.

During the Historic period, the most important aboriginal group in west-central Missouri was the Osage Tribe. By 1673, the Osage were concentrated in several villages in the vicinity of the Osage River (Wiegiers 1982). In the early eighteenth century, the Osage split into two groups with the Little Osage moving to the north adjacent to the Missouri River and the Big or Great Osage remaining along the Osage drainage. A large body of the Osage resettled in Arkansas in the early nineteenth century. In 1837 all Osage were evicted from Missouri by the State Militia. By 1846 the Osage occupied a large reservation in southern Kansas. By the 1870s they were moved from there to Oklahoma.

Euroamerican

From the middle of the seventeenth century until the middle of the eighteenth century, the French controlled the lands drained by the Mississippi River. This "Louisiana Territory" was transferred to Spain in 1762 as the result of the Treaty of Fontainebleau. The Spanish controlled this area, including what was later to become Missouri, until 1800 when the treaty of San Ildefonso transferred Louisiana back to France, who controlled the area until 1803 when the United States made the Louisiana Purchase.

During this period of European control there were numerous trappers, traders and explorers making incursions into the Osage River Region (e.g., Claude Du Tisne and Phillip Renault in 1719 and Zebulon Pike in 1806) (Chapman 1946:16; Graves 1925:409; Jackson 1966:306).

The recorded settlement of the project area began in 1832 when Robert Graham, Thomas English, John Crisp and Mr. Crump occupied a campsite along the Sac River located about two miles east of the present town of Stockton (Goodspeed Publishing Co. 1889). Early settlement focused on the fertile bottomlands and upland prairies. Most immigrants come from the states of Kentucky, Tennessee, Indiana or Ohio (Abbott and Hoff 1971). Prior to the Civil War some large bottomland farms employed slave labor, although most of the population combined subsistence farming with open range, stock grazing and hunting of wild game to earn their living.

Several grist and saw mills were built along the Sac River or its tributaries. The first, Cedar Mill, was built on Cedar Creek in 1837 by John Williams (Linderer 1977). It was followed by several others including Crow's (Owen's) Mill on Bear Creek, Bell's Mill, Caplinger's Mill, Dunnegan's Mill and Montgomery's Mill, all constructed in the 1840s (Abbott and Hoff 1971; Linderer 1977).

Cedar County was laid out in 1845 and the county seat, Lancaster, was platted the following year. The name of the county seat was changed to Freemont in 1847 and then to Stockton in 1849 (Abbott and Hoff 1971).

The geographic location of the project area near the Mason-Dixon Line promoted division among the communities in the project area, with volunteers joining both the northern and southern causes. No major battles took place within Cedar County, although hostilities took place on two occasions within Stockton. The first raid was led by Col. Livingston and was repelled by Union Sympathizers in July of 1863. A much larger force of 3000 of Shelby's raiders returned to Stockton in the fall of 1863 and upon finding the town deserted, they burned the court house, Caplinger and Crow Mills, as well as a number of farmsteads in the county (Goodspeed Publishing Company 1889). Fortunately the county records were removed from the courthouse earlier in the war and were preserved (Abbott and Hoff 1971).

Following the devastation of the Civil War, the local economy rebounded and Stockton became a major trade and transportation center for the project area. The court house was rebuilt in 1867 and in 1870 the first railroad was constructed from Sedalia to Nevada. A number of stores, a hotel, a brewery and the first newspaper, the Stockton Tribune, were established during the decade following the war (Abbott and Hoff 1971). El Dorado and Jerico Springs were developed as commercial resorts during the 1880s.

The end of the nineteenth and beginning of the twentieth centuries witnessed increased growth of the agricultural economy of the project area and Stockton continued to develop. Following World War II, stock raising became more important to the local economy as did cheese and walnut processing. However, as in most of rural Missouri, the post-war years witnessed a gradual decline in the population of Cedar County as the younger generation moved to urban areas for employment. The construction of the Pomme de Terre and Stockton reservoirs in the 1950s and 1960s resulted in a shift from the predominately agricultural economy to one based on recreation and tourism.

V. SITE FILE SEARCH AND LITERATURE REVIEW

John M. Parisi

The Scope-of-Work for the proposed survey and testing program in the Downstream Stockton Project Area required an inventory and National Register testing of 148 ac of the Downstream Stockton Project Area and National Register testing at 12 sites. The areas to be surveyed include 14 small areas along the Sac River and its tributaries (Figure 3). From south to north these areas have been designated as the Bear Creek West, Bear Creek East, Alder Branch West, Alder Branch East, Landing Strip, Highway J North, Highway J South, Stockton Branch South, Stockton Branch North, Silver Creek, Keith Island, Horseshoe Bend South, Horseshoe Bend North and Caplinger Mills Survey Areas.

Soils within the project area are primarily alluvial soils found on floodplains and lower terraces. In general the area to be inventoried includes floodplain and low terrace geomorphological surfaces. Presumably these soils correlate with surfaces that have been identified as T-0 and T-1 surfaces elsewhere in the Osage drainage (Schmits 1984).

The data compiled by Moffat and Houston (1986) and Roper (1977) indicates that a number of previously identified sites have been located immediately adjacent to the proposed survey areas. These include sites 23CE231, 23CE233, 23CE250, 23CE258 and 23CE259 recorded by Roper (1977) and sites 23CE402, 23CE410 and 23CE418, as well as Find Spot 4, recorded by Moffat and Houston (1986). However, only one previously recorded site, 23CE409, was located within any of the proposed survey areas. It was recently located in the Silver Creek Survey Area by Moffat and Houston (1986).

Based on current available data at the U.S. Army Corps of Engineers, Kansas City District, a total of 79 sites containing 97 components are located in the vicinity of the Downstream Stockton study area (Table 3). Included are one Dalton, five Middle Archaic, 17 Late Archaic, 39 Woodland, five Historic Euroamerican and 30 unknown prehistoric components.

No Paleo-Indian components have been reported for the project area although local collectors have recovered Paleo-Indian points. The Dalton component at the Montgomery site (23CE261), is deeply buried within a cutbank of Sac River (Collins et al. 1983). A number of Dalton points were recovered from the site as well as Hardin Barbed, Cache River Notched and Graham Cave Notched points indicating that an Early Archaic component may also be present (Collins et al. 1983).

The five Middle Archaic components were reported by Roper (1977) on the basis of surface finds of Rice Lobed, Big Sandy Notched, Jackie Stemmed and Smith Basal Notched projectile points. A sixth Middle Archaic component was reported by Roper (1977) at 23CE235. Later test

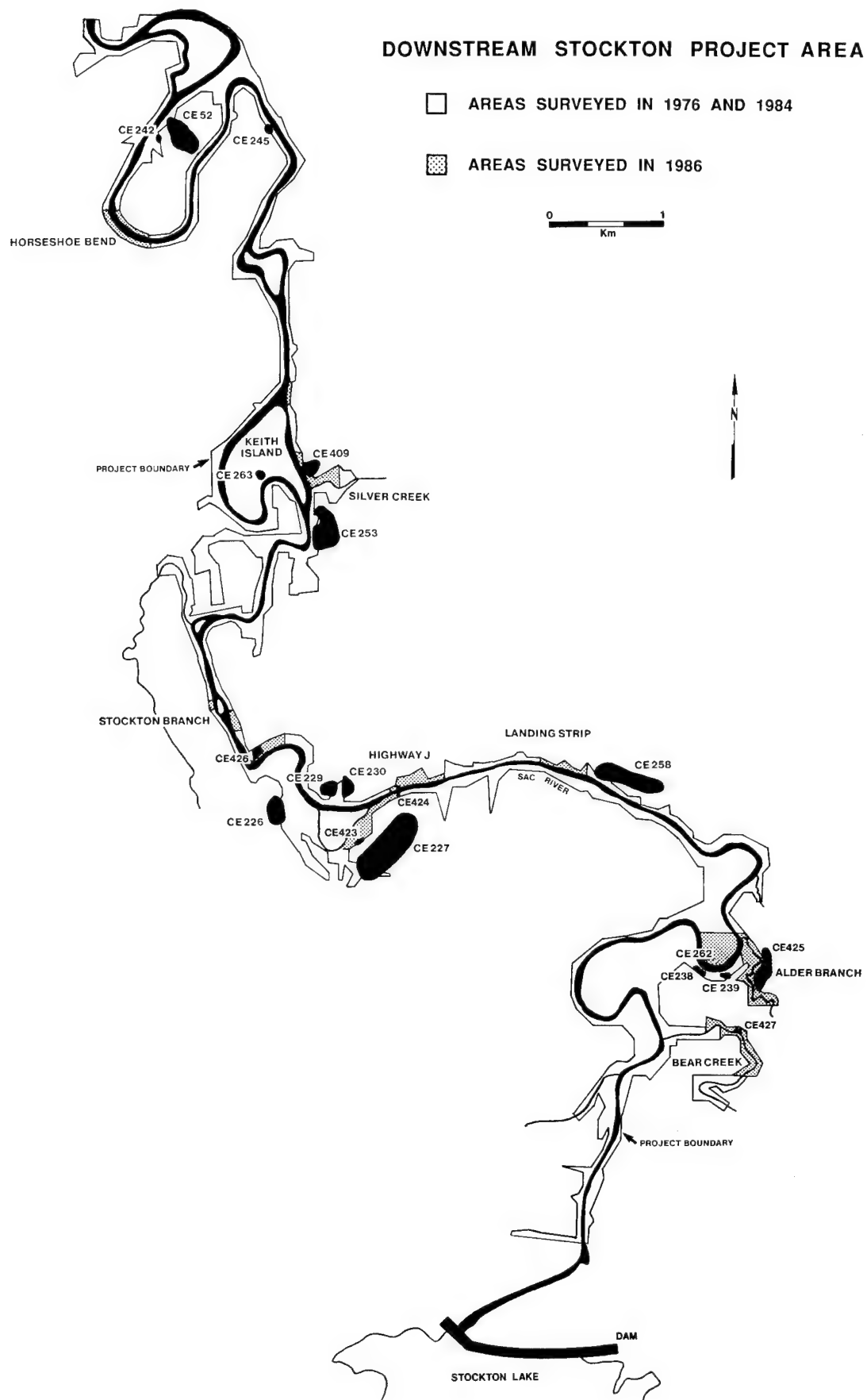


Figure 3. Location of survey areas and sites tested in the Downstream Stockton Project area.

excavations indicated that the site dated to the Woodland period (Perttula and Purrington 1983). The 17 Late Archaic components are represented primarily by surface finds of Table Rock Stemmed, Stone Square Stemmed, Smith and Afton points. Eight of these components were reported by Roper (1977), one by Perttula and Purrington (1983) and eight by Moffat and Houston (1986). Although test excavations have been conducted at six of these sites, no radiocarbon dates are available, and the inferred cultural affiliations are based on diagnostic point types.

The 39 Woodland components include two identified as Middle Woodland, four as Late Woodland and 33 simply as Woodland. Roper (1977) separated the 17 Woodland sites recorded in 1976 into two groups. The first group included seven sites with contracting stemmed or shallow side-notched dart points which were interpreted to date to the earlier portion of the Woodland period and the second group consisted of nine sites with smaller arrow points which dated to the later part of the Woodland period. Perttula and Purrington (1983:43) have noted that a considerable degree of temporal overlap exists between these point types and that a clear dichotomy of earlier larger dart points and later arrow points does not exist. Moffat and Houston (1986:39) suggest that both groups of sites date to the Late Woodland period. The other 16 Woodland components have been identified on the basis of contracting stemmed, shallow side-notched or small corner-notched projectile points (Moffat and Houston 1986; Perttula and Purrington 1983).

The two Middle Woodland components were recorded by Moffat and Houston (1986) at 23CE241 on the basis of Steuben Expanded Stemmed points and at 23CE417 on the basis of fabric impressed ceramics. It should be noted that Steuben points have also been recovered at Late Woodland sites in Missouri and that since neither of these Middle Woodland components have been dated, the assignment of these components to the Middle Woodland period remains tentative.

One of the five Late Woodland components identified in the project area has been assigned to the Lindley phase (Moffat and Houston 1986) on the basis of the presence of limestone tempered cordmarked ceramics. The other Late Woodland components contain small corner-notched or triangular arrow points. Two of these, 23CE406 and 23CE412, may date to the Mississippian period. Four of the Late Woodland sites have been tested (Moffat and Houston 1986; Perttula and Purrington 1983).

Two of the five Historic Euroamerican components in the project area are mills, including Caplingers Mill (23CE400), and Owens Mill (23CE393). Both of these mills date to the early Historic settlement of the project area (Linderer 1977). Another of the historic sites, 23CE411, appears to be associated with Owens Mill (Moffat and Houston 1986), while the other Euroamerican components appear to represent farmsteads (Roper 1977) or dumps dating from the late nineteenth to mid-twentieth centuries (Perttula and Purrington 1983).

The 1838 GLO map does not show any improvements or farmsteads located in the 1986 survey areas. Other than the mill sites discussed above, and Cedar Mill, an earlier abandoned mill site located in the project area, early settlement did not take place on the Sac River

Table 3. Archaeological sites presently known in the vicinity of the Downstream Stockton Project area.

SITE	CULTURAL AFFILIATION	REFERENCE	LEVEL OF INVESTIGATION
23CE14/ 264	Woodland, Late Archaic	Moffat and Houston (1986)	Testing
23CE15	Unknown	MAS	Survey
23CE16	Unknown	Roper (1977)	Survey
23CE17	Unknown	MAS	Survey
23CE42	Unknown	Roper (1977)	Survey
23CE51	Unknown	Roper (1977)	Survey
23CE52*	Woodland	Roper (1977)	Survey
23CE131/ 235/324	Woodland	MAS	Survey
23CE156	Unknown	MAS	Survey
23CE222	Unknown	Roper (1977)	Survey
23CE223	Woodland, Late Archaic	Moffat and Houston (1986)	Survey
23CE224	Woodland	Roper (1977)	Survey
23CE225	Unknown	Roper (1977)	Survey
23CE226*	Woodland	Roper (1977)	Survey
23CE227*	Woodland, Late Archaic, Middle Archaic	Roper (1977)	Survey
23CE228	Unknown	Roper (1977)	Survey
23CE229*	Woodland	Roper (1977)	Survey
23CE230*	Unknown	Roper (1977)	Survey
23CE231	Unknown	Roper (1977)	Survey

(continued)

Table 3 continued. Archaeological sites presently known in the vicinity of the Downstream Stockton Project area.

SITE	CULTURAL AFFILIATION	REFERENCE	LEVEL OF INVESTIGATION
23CE232	Unknown	Roper (1977)	Survey
23CE233	Unknown	Roper (1977)	Survey
23CE234	Late Archaic	Roper (1977)	Survey
23CE236	Woodland	Roper (1977)	Survey
23CE237	Middle Archaic	Roper (1977)	Survey
23CE238*	Unknown	Roper (1977)	Survey
23CE239*	Unknown	Roper (1977)	Survey
23CE240	Historic Euroamerican, Woodland, or Late Archaic	Perttula and Purrington (1983)	Testing
23CE241	Late Woodland	Perttula and Purrington (1983)	Testing
23CE242*	Woodland, Late Archaic, Middle Archaic	Roper (1977)	Survey
23CE243	Woodland Late Archaic	Roper (1977)	Survey
23CE244	Woodland	Roper (1977)	Survey
23CE245*	Woodland	Roper (1977)	Survey
23CE246	Unknown	Roper (1977)	Survey
23CE247	Unknown	Roper (1977)	Survey
23CE248	Late Archaic	Roper (1977)	Survey
23CE249	Woodland	Roper (1977)	Survey
23CE250	Late Archaic	Roper (1977)	Survey

(continued)

Table 3 continued. Archaeological sites presently known in the vicinity of the Downstream Stockton Project area.

SITE	CULTURAL AFFILIATION	REFERENCE	LEVEL OF INVESTIGATION
23CE251	Woodland	Roper (1977)	Survey
23CE252	Woodland	Perttula and Purrington (1983)	Testing
23CE253*	Historic Euroamerican, Woodland, Late Archaic, Middle Archaic	Roper (1977)	Survey
23CE254	Unknown	Roper (1977)	Survey
23CE255	Woodland, Late Archaic	Moffat and Houston (1986)	Testing
23CE256	Unknown	Roper (1977)	Survey
23CE257	Unknown	Roper (1977)	Survey
23CE258*	Woodland, Late Archaic	Roper (1977)	Survey
23CE259	Woodland, Late Archaic	Roper (1977)	Survey
23CE260	Unknown	Roper (1977)	Survey
23CE261	Dalton	Collins et al. (1983)	Testing
23CE262*	Middle Archaic	Roper (1977)	Survey
23CE263*	Unknown	Roper (1977)	Survey
23CE393	Historic Euroamerican	Klinger et al. (1984)	Testing
23CE400	Historic Euroamerican	Moffat and Houston (1986)	Survey
23CE401	Woodland, Late Archaic	Moffat and Houston (1986)	Testing

(continued)

Table 3 continued. Archaeological sites presently known in the vicinity of the Downstream Stockton Project area.

SITE	CULTURAL AFFILIATION	REFERENCE	LEVEL OF INVESTIGATION
23CE402	Unknown	Moffat and Houston (1986)	Survey
23CE403	Woodland	Moffat and Houston (1986)	Testing
23CE404	Late Archaic	Moffat and Houston (1986)	Survey
23CE405	Unknown	Moffat and Houston (1986)	Testing
23CE406	Mississippian/ Late Woodland	Moffat and Houston (1986)	Testing
23CE407	Woodland	Moffat and Houston (1986)	Survey
23CE408	Woodland, Late Archaic	Moffat and Houston (1986)	Testing
23CE409*	Woodland, Late Archaic	Moffat and Houston (1986)	Survey
23CE410	Woodland, Late Archaic	Moffat and Houston (1986)	Testing
23CE411	Historic Euroamerican, Middle Woodland	Moffat and Houston (1986)	Survey
23CE412	Mississippian/ Late Woodland	Moffat and Houston (1986)	Testing
23CE413	Unknown	Moffat and Houston (1986)	Survey
23CE414	Unknown	Moffat and Houston (1986)	Survey
23CE415	Unknown	Moffat and Houston (1986)	Survey
23CE416	Woodland	Moffat and Houston (1986)	Survey
23CE417	Middle Woodland	Moffat and Houston (1986)	Testing
23CE418	Woodland	Moffat and Houston (1986)	Testing
23CE419	Late Woodland (Lindley Phase)	Moffat and Houston (1986)	Testing

(continued)

Table 3 continued. Archaeological sites presently known in the vicinity of the Downstream Stockton Project area.

SITE	CULTURAL AFFILIATION	REFERENCE	LEVEL OF INVESTIGATION
23CE420	Woodland	Moffat and Houston (1986)	Testing
23CE421	Woodland	Moffat and Houston (1986)	Testing
23CE422	Woodland	Moffat and Houston (1986)	Survey

*Indicates site tested by ESA.

floodplain (Linderer 1977). The town of Williamstown (Stockton) is shown on the 1838 GLO map as well as areas of bottomland forest and prairie within several of the proposed survey areas. Construction of the mill sites began between 1837 and 1841. By 1908 farmsteads were located throughout the project area on the higher terraces but none are shown within the proposed survey areas (Ogle 1908).

VI. RESEARCH DESIGN

Larry J. Schmits and John M. Parisi

The design of the Downstream Stockton Project survey and testing program was designed to satisfy the five fundamental requirements of the project as outlined in the Scope of Work:

(1) To determine the number of prehistoric and historical archaeological cultural resources present within the study area;

(2) To define the areal and temporal extents of any inventoried cultural resources;

(3) To establish the cultural and/or scientific importance of any inventoried cultural resources;

(4) To determine the potential eligibility to the National Register of Historic Places of any inventoried cultural resources; and

(5) To define possible alternatives for the mitigation of potential National Register sites.

These five requirements provide the information needed for the effective management of the cultural resources located in the Downstream Stockton Project area. In addition to these management needs, there is a scientific need for more systematic information about the prehistory of the Stockton Lake area. Research that has been conducted in the vicinity in the past has been less than comprehensive, and as a result, many basic questions regarding the nature of the prehistoric adaptations in the area remain unanswered. The development of a systematic body of data about the prehistoric cultural resources of the Downstream Stockton project area provides the data needed to address a number of significant research questions about the archaeology of southwest Missouri, some of which have been discussed in the preceeding chapters of this report.

RESEARCH GOALS

Based on the previous work conducted at Stockton Lake several avenues of research appeared to be especially important. These include: (1) development of a preliminary model of alluvial history of the Sac River valley; (2) development of a cultural chronology of the Downstream Stockton area; and (3) the investigation of settlement-subsistence patterns.

Geomorphology

Almost no information on the alluvial chronology of the Sac River basin is available despite the fact that previous surveys of the Downstream Stockton area indicate that a majority of prehistoric sites are located in alluvial settings and that some are deeply buried in alluvial sediments. Effective management of the archaeological resources in the area therefore requires a knowledge of the alluvial history that led to the formation of the floodplains and terraces of the Sac River and its tributaries. An objective of the proposed project was to provide a preliminary model of the alluvial history of the Sac River valley based on geomorphological information collected from the sites investigated. This information would provide a baseline with which to assess the potential for buried sites in the project area.

Culture History

Roper's (1977) survey in the Downstream Stockton area provides the earliest and most complete statement regarding the culture history and settlement-subsistence patterns for the project area. This survey recorded a total of 44 sites along the Sac River. On the basis of diagnostic projectile points about half of these were assigned to a specific cultural period including one Dalton, six Middle Archaic, eight Late Archaic and 15 Woodland components. The Dalton component was the deeply buried Montgomery Site (23CE261). The six Middle Archaic components were identified on the basis of Etley, Rice Lobed, Big Sandy and Jackie Stemmed points. The eight components assigned to the Late Archaic period contained Table Rock Stemmed, Stone Square Stemmed, Smith Basal Notched and various unnamed corner-notched forms. The 15 Woodland components include seven assigned to an early stage of the Woodland period based on the presence of larger Langtry and Gary contracting stemmed points and Rice side-notched points. The remainder include sites with small triangular arrow points such as Scallorn and Cahokia that were thought to date to the later stage of the Woodland period. These later sites undoubtedly overlap with the Mississippian occupation of the area.

The available literature indicates that little information is available for Paleo-Indian, Dalton and Early Archaic occupations in the Stockton Lake area, although Paleo-Indian, Dalton and Early Archaic points have been recovered eroding from the cut bank of the Sac River at the Montgomery site (Collins et al. 1983). A major objective of the proposed work was to locate other early sites to better document the Paleo-Indian, Dalton and Early Archaic prehistory of the project area.

While the Middle Archaic is somewhat better represented in the project area, more recent excavations at one of the sites, 23CE235, assigned to the Middle Archaic period indicates that it in fact dates to the Woodland rather than Middle Archaic period (Pertulla and Purrington 1983). A Middle Archaic component may also be present at the Montgomery site where Rice Lobed and Big Sandy Notched points have been recovered above the Dalton/Early Archaic levels (Collins et al. 1983).

None of the Middle Archaic sites have been dated and tighter chronological control of this period remains an important research goal. Furthermore the relationship between the Middle Archaic occupants of the Downstream Stockton area and the better known Middle Archaic occupations of southwest Missouri at Rodgers Shelter (Kay 1983) or the James River Complex (Chapman 1975) is in need of further research.

The density of sites in the project area increases markedly during the Late Archaic period with a total of 17 sites reported. Most are recognized on the basis of point types such as Table Rock Stemmed, Stone Square Stemmed, Smith Basal Notched and Afton Corner-Notched. Although six of the sites have been tested, no radiocarbon dates are available. The chronology of the Late Archaic remains an important area of further research as does the relationship of these sites with the better known Late Archaic Sedalia phase (Kay 1983) of southwest Missouri.

Although a relatively large number of Woodland sites have been located in the Stockton area, none of these sites have been radiocarbon dated and their assignment to the Woodland period is based primarily on projectile points recovered. Roper (1977) has separated these sites into early and late segments of the Woodland period based on differences in point types present. The lack of radiometric dates precluded assessment of the chronological relationship between these two groups of sites or their relationship to neighboring Woodland cultural units. Since a number of the sites scheduled for testing contained Woodland components, a major objective of the investigations was to obtain radiocarbon dates from these sites.

Settlement Patterns

The investigation of settlement patterns is a second major objective of the proposed investigation. We consider settlement patterns to be adaptive systems comprising a number of distinct functional or seasonal aspects each with its characteristic environmental setting and archaeological assemblage.

Recent investigations of settlement location have emphasized the importance of viewing determinants of site placement in terms of the broad subsistence area commanded from a given point rather than in terms of the distinctive characteristics of the point itself (Bettinger 1980). Jochim's (1976) model holds site location to be the result of combined attraction between social groups and its individual subsistence resources, whereas other models hold locational determinants to vary according to site types (Wood 1978).

The most extensive analysis of site type and function is that developed by Binford (1978, 1980, 1982). Much of this work has been adapted by Brown and Vierra (1983) and Greiser (1985).

The presence of various site types largely reflects the degree of sedentism or mobility of a particular group. The degree of sedentism is to a large extent related to the subsistence patterns. Binford (1980) has suggested two major logistical strategies employed by hunter-

gatherers. The first is referred to as a foraging strategy. Foragers typically do not store foods but gather foods daily. Considerable variability among foragers is present in the size of the mobile groups, as well as in the numbers of residential moves that are made in an annual cycle. In contrast to foragers, "collectors" supply themselves with specific resources through specially organized task groups (Binford 1980). Collectors are characterized by storage of food for at least part of the year and logistically organized food-procurement parties. Special task groups may have a residential location and establish a field camp or station from which food procurement operation may be planned and executed.

Binford (1980) suggests that in a foraging adaptive pattern, two general types of sites are occupied, with little redundancy in the use of sites. Residential sites serve as the hub of subsistence activities with both extractive and maintenance activities occurring. Variability in the archaeological content of these sites can stem from seasonal changes in resource availability or variation in the duration of occupation. The second type posed by Binford (1980) is the location, which is used exclusively for extractive tasks. As a result of their short-term use, locations evidence few tools.

The collecting strategy generates several other site types (Binford 1980). Such an adaptation results not only in residential sites and locations, but also in sites referred to as field camps, stations, and caches. The first of these latter three types involves only minimal maintenance activities and serves as a temporary center for a task group. Therefore, in terms of size, a field camp is intermediate in size falling between a residential site and a location. Stations result from information gathering activities by special purpose task groups for specific resources, while caches result from field storage activities (Binford 1980).

In order to infer site function, an analytical framework must be developed to evaluate the archaeological record. A fundamental question is whether certain site types are related to particular adaptive strategies, such as foraging or collecting, or whether specific site types are associated with different patterns. Few Plains or Midwestern archaeological studies have explicitly addressed the issues involved in defining site types and function. Usually evaluative statements are made to the effect that a site is a "residential site", "hunting camp", or an "extractive locus" with little explanation as to how these postulated functions were determined or how these site types relate to an overall settlement pattern.

It is also important to note that there are some complicating factors in inferring site function. For mobile populations, a particular site may function in more than one capacity. For example, a residential site may also be utilized as a location or field camp at other times of the year, depending upon shifts in resource availability and seasonal variation in activities (Binford 1982). Consequently, residential sites often have the most complex internal structure because of this potential for differential usage over time (Binford 1978, 1982).

There are a number of types of data that are important in establishing the function of the sites investigated below Stockton Dam. The site typology used places a heavy emphasis on the presence or absence of activities or tasks carried out at a site, particularly those associated with maintenance and extractive tasks. The relative range of tool types indicates the type of tasks and activities conducted at a site while overall site size and debris density can provide indications of the population size and intensity. The presence of features or evidence of specialized refuse disposal are also important in assessing the type and duration of occupation (Murray 1980). Certain types of data such as evidence of habitation structures, burials, storage facilities, prepared hearths, and so forth weigh heavily in such an analysis. Faunal and floral remains provide an important indication of subsistence patterns and seasons of occupation of a site. Variability in lithic resources provides important clues regarding the degree of mobility for prehistoric groups.

Brown and Vierra (1983) have suggested a tripartite site typology consisting of extractive camps, residential camps and base camps. According to this scheme extractive camps are used only by the productive members of a band for short specific tasks. These sites are generally small with few features (primarily hearths), few tool types and a low diversity of plant and animal remains. The spatial organization of these sites is the least complex. Relative to Binford's classification, these extractive camps correspond most closely to field camps, although in a foraging adaptive pattern, these might be analogous to Binford's locations.

Residential camps are more complex and contain an increase in the range of tools in the assemblage, the overall debris density, and the features produced from an occupation by the total residential population. A larger range of tool types, features and camp debris is present than at extractive sites, but without a predominance of tools and remains associated with specific exploitative practices or specialized resource acquisition. Residential camps are occupied for relatively brief intervals usually for a single season. Activities are less likely to be separated spatially with generalized activity areas being common. These sites would be analogous to both the residential sites and the field camps of Binford, with differences being in degree rather than type.

Base camps, in Brown and Vierra's (1983) typology, leave a broad range of tools, debris and features resulting from occupation by the total population. The prolonged occupation at base camps results in the appearance of tools and debris indicative of specialized exploitative patterns of specific habitats.

Roper (1981:35-36) has summarized the expected archaeological characteristics of these site types. Base camps should: (a) be strategically located in relation to the most secure, immobile resources available; (b) cover large areas and have high artifact densities, dense middens, storage facilities and structural features; and, (c) contain a large and diverse tool kit. Residential camps should: (a) be strategically located in relation to immobile resources; (b) exhibit

smaller site size and lower debris densities than base camps with little midden staining only occasional storage features and flimsy structures; and (c) contain a diverse tool kit with a tendency toward multipurpose and unspecialized tool forms. Extractive camps should: (a) be located where procurement of one or a few selected high yield resources occur; (b) cover small areas, exhibit low artifact densities and lack storage facilities or dwellings; and (c) contain only tools associated with procurement or preliminary processing. A major research goal of the proposed Downstream Stockton Project was to determine the function of the sites tested and whether they represent base camps, residential camps or special purpose extractive camps.

Four of the sites scheduled for testing (23CE227, 23CE242, 23CE253 and 23CE262) have reported Middle Archaic components. On the basis of the materials recovered and artifact density Roper (1977) suggested that 23CE242 was occupied for a brief duration while 23CE227 and 23CE253 represent larger more intensively occupied base camps. In contrast 23CE262 was interpreted to represent a smaller, less intensively occupied special purpose camp, even more focused on the exploitation of the riverine environment. Roper (1977) postulated that the observed increase in the use of the riverine environment during the Middle Archaic was a result of the warmer, drier Hypsithermal climate that reduced flooding and stabilized the bottomland forest, rendering it more suitable for human habitation.

Late Archaic components have been identified at four of the sites scheduled for testing including 23CE227, 23CE242, 23CE253 and 23CE258 (Roper 1977). Roper interprets Late Archaic settlement patterns to reflect a clear dichotomy of site locations possibly representing a response to changing climatic conditions. Two types of site locations were recognized. The first site type, represented by 23CE242, contains a limited artifact assemblage and was located far from the bluff base on the floodplain of the Sac River. This location was focused on floodplain resources. The second type of Late Archaic site type reflected a greater variety of activities and was represented by 23CE227, 23CE253 and 23CE258. The later two sites are located on the floodplain adjacent to the bluff base and appeared to be focused on upland resources. 23CE227 was located in an intermediate position but appears to be more closely related to the bluff base sites. Roper interpreted Late Archaic sites located near the bluff base as long term occupations, possibly representing base camps, while the sites nearer the river were thought to represent special purpose limited activity campsites. Thus according to Roper's model, an environmentally induced shift in locational strategy occurred between the Middle and Late Archaic periods, with base camps moving toward the uplands during the latter period.

Additionally, the increase in the number of Late Archaic occupations in the project area suggests either a population increase or perhaps a shift in the pattern of exploitation of the riverine environment generating a greater diversity of sites. Such an increase in overall site density during the Late Archaic may indicate a corresponding shift in the subsistence strategy, perhaps from a foraging economy with high residential mobility to a collecting economy with a

greater range of site types and increased sedentism.

Roper (1977) indicated that further investigation at these sites, in conjunction with the survey of upland areas, would provide the data needed to answer important research questions regarding the apparent shift between Middle and Late Archaic settlement patterns in the project area. An objective of the 1986 test investigations below Stockton Reservoir was to provide a preliminary assessment of Roper's (1977) hypothesis of a shift in settlement patterns between the Middle and Late Archaic periods.

Two sites to be tested, 23CE229 and 23CE242, were assigned by Roper to the early stage of the Woodland period. Based on the quantity and diversity of artifacts present at 23CE229, Roper (1977) suggests that it represents a Woodland village similar to the Flycatcher and Dryocopus sites at Stockton Lake and the Infinity site in southeastern Kansas. The site is located on the floodplain of the Sac River and may have been positioned to make optimal use of the riverine riparian slope and upland biotic communities. In contrast, site 23CE242 contains a much more restricted assemblage and was thought to be a limited use camp located in a meander loop of the Sac River.

Five of the sites scheduled for testing (23CE226, 23CE227, 23CE245, 23CE253 and 23CE258) were assigned to the late stage of the Woodland period. Except for 23CE227, which is located in an intermediate position, these sites are located either near the edge of the Sac River or adjacent to the footslopes of the valley wall. 23CE227, 23CE253 and 23CE258 are multicomponent sites and were interpreted to be fairly intensive occupations. In contrast, sites 23CE226 and 23CE245 are small single component occupations probably representing short term limited activity camps. One objective of the proposed test excavations was to better characterize the Woodland settlement patterns and to more firmly establish their cultural-historical placement.

METHODOLOGY

The methodology utilized during the Downstream Stockton Project is best discussed as a series of closely related phases. These phases include (1) literature review, (2) field survey, (3) site testing, and (4) laboratory analysis. Our approach to each of these phases is reviewed below.

Literature Review

The literature review phase was to a large degree conducted concurrently with the development of the research design. Major literature pertaining to the cultural resources of the Downstream Stockton Study Area result from the six major cultural resources projects conducted there since 1976. These include the reports of Roper (1977), Collins et al. (1983), Perttula and Purrington (1983), Klinger

et al. (1984) and Moffat and Houston (1986). In addition to this work a number of studies have been completed in the Stockton Lake project area including Wood (1965, 1966), Nichols et al. (1980), and Wood and Brock (1985). The information contained in these reports has been discussed in previous sections of this report.

The literature review phase also included a review of the site survey forms on file at Missouri Archaeological Survey. Individuals familiar with and local to the project area, as well as agencies of local and county governments were consulted for information on the cultural resources of the project area. Nineteenth and twentieth century plat maps were examined to determine if historic sites were located in the project area.

Field Survey and Testing

The fundamental component of the project was the survey and testing of the archaeological sites within the project area. The field survey consisted of an intensive pedestrian inventory of the project area which is located between the banks of the Sac River and the outer boundary of the U.S. Army Corps of Engineers slough easement. Survey transects were linear or curvilinear paralleling the banks and did not exceed 30 m in width.

Pedestrian survey took full advantage of exposed soils such as plowed fields, erosional gullies, rodent burrows, cutbanks and other disturbances which represented the best situations for site discovery. In areas where no such disturbances were present or where surface visibility was not adequate to ascertain the presence/absence of cultural resources, shovel testing was utilized to examine obscured soils for evidence of archaeological sites. Profiling of steep cutbanks was conducted in areas where these features were present.

Local artifact collectors familiar with the Downstream Stockton Project area and knowledgeable about the sites to be tested or located within the project boundaries were conducted. Individuals contacted include Eric Brougher, Aaron Brauer and Clark Montgomery, Jr.

Once a cultural resource was discovered by pedestrian survey, the focus became the testing and National Register evaluation of the site. The test excavations provided information on site limits, presence/absence of surface and buried cultural materials, cultural components present, type of site and condition of the site within the slough easement boundary. The testing included an extensive program of shovel testing, coring, and test unit excavation to determine the National Register status of these sites.

The initial phase of the National Register testing program consisted of a resurvey of each of the sites to determine the extent of each site within the government easement. After the site was located the periphery was flagged and a temporary datum established. The portions of the sites within the easement were systematically mapped and all diagnostic artifacts were mapped and collected. Maps tying the site

to topographic contours and natural features were prepared with a transit or alidade. Collection techniques varied according to the size of the site and density of cultural material present as well as the extent of the site located within the government easement.

The primary method of subsurface exploration was the excavation of test units. The primary objective of these excavations was to produce sufficient data to make a determination of eligibility for the National Register of Historic Places for the property in question. The primary types of data sought during the testing phase were: (1) horizontal and vertical extent of the sites; (2) data which would establish the nature, density and cultural affiliation of the occupation; and (3) information useful for formulating a mitigation plan.

Testing required the establishment of a permanent datum marker with all collected materials, test units, shovel tests, etc., located and plotted on a plan map indicating the distance and directional orientation in relation to the fixed datum.

Test units consisted of one by one meter hand excavated excavation units. The number of test units placed at any given site depended upon site size and condition. The scope of work limits the number of test units at the sites to 16 sq m. Testing in these units was terminated at a depth of between 80-100 cm unless evidence indicating the presence of more deeply buried deposits was encountered. Level summary forms were completed for each test unit. Data recorded for each level included the site number, excavation unit, depth, excavation techniques, description of soils and stratigraphy, artifacts recovered, features present, special samples and photographs taken. All tools within each test unit were plotted three- dimensionally. Profiles were also recorded and recovered materials were carefully bagged and recorded by level and unit. Excavation levels were normally 10 cm in depth. All test units were backfilled. Feature data forms were completed as features were encountered.

All sites were recorded with black and white photographs and color photographic transparencies. These include general site views as well as views of site details such as soil profiles, work in progress, and features such as buried hearths. Recordation also involved the preparation of field notes and the completion of official Missouri Archaeological Site Survey forms.

Laboratory Analysis

The laboratory analysis phase involved the laboratory preparation of specimens followed by the analysis of the recovered materials and features. Laboratory preparation commenced upon completion of field work and involved the cleaning and cataloging of all artifacts recovered during the project. This phase of work insures that the data gathered during field work were properly documented and inventoried so that they could be adequately reported and made available to future researchers. Upon completion of the analysis the artifacts were returned to the landowners as stipulated by the U.S. Army Corps of Engineers right of entry forms.

The assemblages recovered from the sites were initially sorted into raw material categories such as ceramics, chipped stone, ground stone, unworked stone and other classes of debris. Chipped stone tools and lithic debitage constitute the largest class of artifacts found on most of the sites. Classification is important in organizing this data set and in providing a body of information from which inferences regarding culture history and settlement and subsistence patterns can be made. In practice, an infinite number of classifications are possible depending upon the type of data being sought. In the present study, the primary types of information desired included the chronological placement and identification of functional activities that took place at the site in question. This information is often important in establishing the cultural affiliation of a site and in determining its role in prehistoric settlement and subsistence patterns. At the same time, it is important that a classificatory scheme be a comprehensive descriptive device in order to fully document the technological variability in a prehistoric assemblage.

Lithic Analysis

With the above objectives in mind, the classificatory scheme used has combined elements of many techno-morphological and functional classificatory procedures. A principal objective of the approach was to develop a system which would provide data regarding the use of lithic implements and at the same time permit the rapid classification necessary in a cultural resource management project. The method developed here is a modified version of the analytical system developed by Chapman (1977).

The initial procedure was a technological subdivision of the assemblage into categories based on the presence or absence and type of edge retouch present (Chapman 1977). Retouch can be separated into two general categories defined by the length of retouch scars relative to the surface area upon which they are visible. If the scars extend from the perimeter of the edge over one-third or more of the dorsal or ventral surface of the tool, then the retouch is termed facial or invasive retouch (Figure 4a-b). If the retouch scars extend from the edge perimeter over less than one third of either surface, then it is termed marginal retouch (Figure 4c). Facial retouch observable on only one surface of debitage is termed unifacial retouch (Figure 4b). Facial retouch observed on both the ventral and dorsal surfaces of debitage is termed bifacial retouch (Figure 4a). Facial retouch, whether bifacial or unifacial, results in considerable alteration of the morphology of a piece of debitage. It is assumed to have been undertaken in the context of the manufacture of tools for use in specific contexts.

Within these two categories of facially retouched tools, a number of functional tool classes can be recognized on the basis of morphology (shape), placement of working edge, edge shape and evidence of edge damage or wear. These attributes serve to identify broad functional tool categories which can then be associated with a specific prehistoric activity. Many tools, such as a biface, could easily go through several

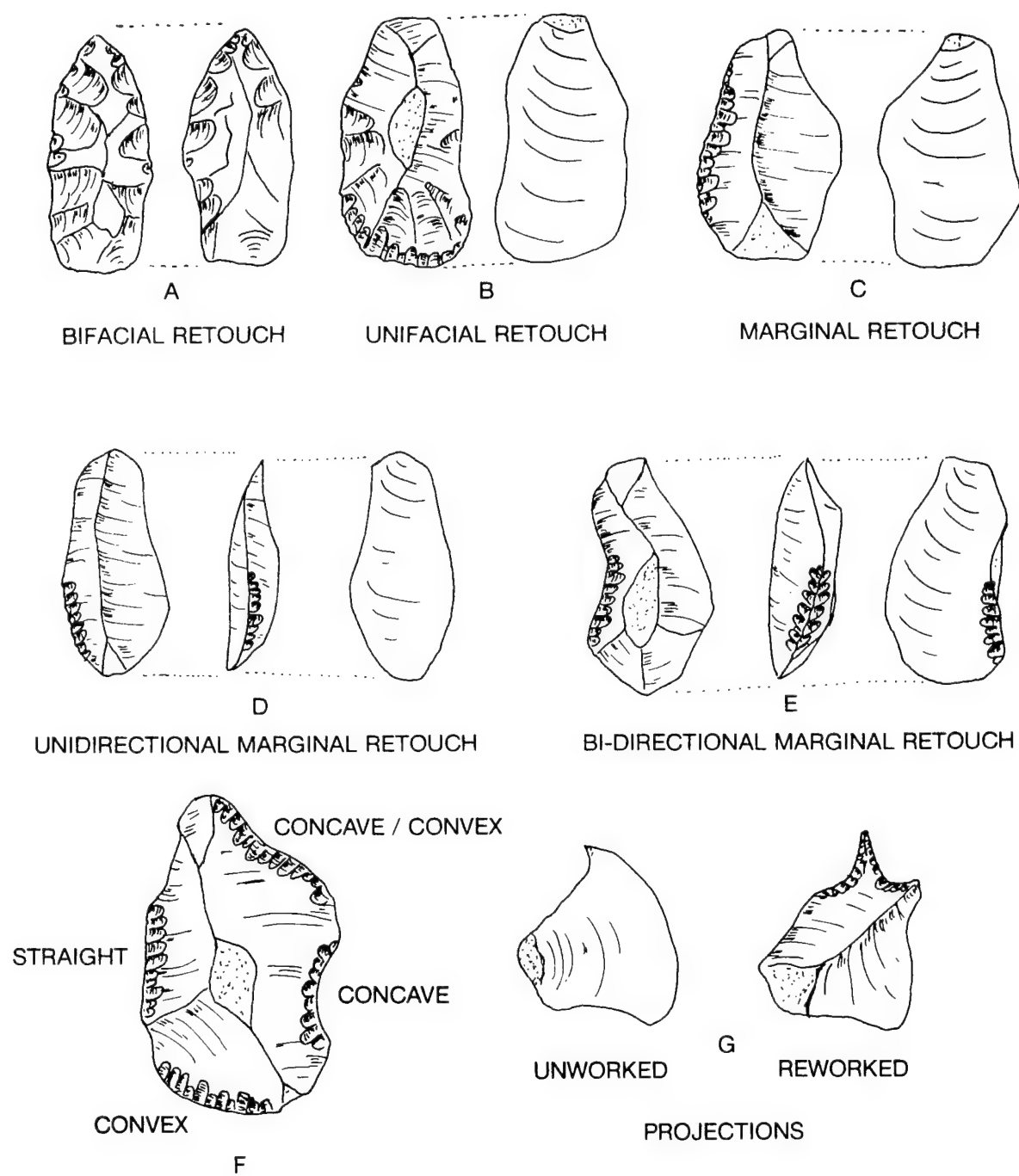


Figure 4. Lithic terminology used in this study. Modified after Chapman (1977).

stages of utilization beginning as a blank, then being used as a knife and then as a projectile point preform. The classification of a tool is generally dependent upon the stage at which it enters the archaeological record.

A second problem encountered is that many tools indicate multiple functional uses, such as cutting wear on projectile points or knife wear on scrapers. Classification of multifunctional tools can be approached in several ways. On cultural resource management projects such as the present one where collections must be rapidly processed, it is often most efficient to assign the tool to its principal functional class, based on the overall morphology of the tool. In this case, a projectile point with secondary evidence of knife wear would still be classified as a point.

Many attributes of edge shape are informative about the function of the tool edge. In general, beveled edge shapes asymmetric to the horizontal plane or maximum projection of the tool are termed plano-clinal and can be associated with scraping use while thin symmetric "biclinal edges" can be associated with use as a cutting tool (Isaac 1977).

Bifacial Tools

Bifacial tools exhibit primary invasive flaking on two surfaces (Figure 4 a). Primary flaking is the removal of large thinning and shaping flakes which significantly alter the outline or cross-section of the tool. Within the general category of biface, there are several functional classes separated on the basis of morphology and evidence of utilization.

Projectile points are symmetrical bifaces with laterally convergent edges that form a distal point and which have a proximal haft element. They are generally considered to be primarily designed to serve as the tip of a projectile. However, this may not always be the case. At Rodgers Shelter, Ahler (1971) has found that tools generally classified as projectile points exhibited wear patterns indicative of other usages. Haft element modifications can consist of side or corner notches, a basal stem or shoulder, or thinning of the base by removal of one or more large flakes. The presence of such modification indicates that the artifact was intended to be mounted on the end of a shaft for use as a piercing tool. However, some bifacial tools which do not exhibit definite hafting modification, but whose size, outline and edge characteristics preclude most other uses, are traditionally classified as projectile points. Small, symmetrical triangular bifaces with or without hafting modification, whose distal margins converge to a point are referred to as arrow points. Generally, only projectile points sufficiently complete for typological classification will be discussed as projectile points.

Bifacial knives are thinned, unstemmed bifaces whose morphology and wear patterns indicate use as a cutting tool. A bifacial knife is generally a triangular or ovate light-duty biface with at least one edge

which exhibits attritional wear. It should be recognized that such wear can result from platform preparation or fine retouching, as well as from cutting utilization and so, may not indicate use as a knife. The presence of wear is generally considered necessary to make a functional interpretation, although detailed wear pattern analysis is generally not necessary.

Bifacial hoes are heavy-duty bifaces with an elongate plan form which have a double-beveled transverse working edge (Reid 1983). Haft margins are often ground but not notched or indented. These tools commonly display silica polish (Witthoft 1967) resulting from use as digging tools. Bifacial hoes from Late Archaic sites in Missouri have been referred to as "Sedalia Diggers" (Chapman 1975).

Bifacial gouges are heavy-duty bifaces with an ovoid, trapezoidal or triangular plan form which have a single beveled transverse working edge (Reid 1983). These tools are also referred to as adzes. Studies of gouges and adzes indicate use of these tools primarily as wood working implements (Hester et al. 1973; Morse and Goodyear 1973).

Bifacial blanks are bifaces which exhibit no readily identifiable wear patterns and thus are not functionally assignable. These can include unfinished tools and tools broken during manufacture, or bifaces which were discarded due to flaws in the raw material. Blanks also subsume the heading of preforms, or tools intended for later reduction into points or knives.

Bifacial scrapers are classified on the basis of the presence of a steep marginal retouch and wear indicative of use as a scraping tool. Many bifacial scrapers appear to be secondarily utilized as scrapers and do not appear to have been manufactured primarily for use as a scraper. Generally, only a small portion of the potential working edge available was utilized as a scraper.

Unifacial Tools

Unifacial tools exhibit primary facial modification on only one surface (Figure 4b). The other surface is unmodified or only marginally modified. Such retouch generally produces substantial modification in the form of a piece of debitage and is directed towards the production of predetermined characteristics. The majority of unifacially modified tools are end scrapers. These tools have ovate to subtriangular outlines with a steeply angled, excurvate working edge at one end and facial flaking over most of the dorsal surface. They are generally considered to be hideworking tools.

Marginally Retouched Tools

Tools with subinvasive retouch are classified as marginally retouched when the retouch extends along more than one third of the perimeter of the tool. Marginally retouched tools include flake scrapers and perforators. Flake scrapers are characterized by a steep

angle of retouch, while perforators are characterized by a projection suitable for piercing.

Edge-Modified Tools

These tools make up the majority of the artifacts from many sites. Edge-modified debitage are informal implements which exhibit marginal retouch in the form of deliberate flaking along one or more edge. This modification generally extends over less than one third of the perimeter of the artifact and is generally confined to from 1-5 mm along the tool margin. These tools are usually subdivided into debitage categories such as edge-modified flakes or edge-modified chunks. Such tools will generally see one episode of use and will rarely be curated or maintained.

Lithic Manufacturing Debris

Lithic manufacturing debris comprises the majority of the assemblages recovered from investigated sites. Initially, this material was subdivided by techno-morphological attributes into cores, chunks and debitage. In some cases cores, chunks and debitage were subdivided into more specific categories characterizing the nature of the lithic assemblage and providing a more detailed analysis of the stages of lithic tool manufacture conducted at the sites. Definitions of classes of lithic manufacturing debris are presented below.

Cores consist of pieces of chert which exhibit patterned negative flake scars from which flakes were removed by direct or indirect percussion. Within the general category of core, several morphological classes can be recognized based on the size, shape, degree of platform preparation and flake scar patterning observed.

Chunks consist of angular multifaceted pieces of chert greater than 3 cm in maximum dimension. They exhibit none of the systematic flake removal associated with cores nor any of the morphological characteristics of flakes. Most represent trimming elements removed during the initial reduction of a core or material that was discarded as a waste by-product during lithic manufacture. Cortical chunks are simply chunks that exhibit one or more cortical surfaces.

Debitage consists of generalized waste flakes and shatter detached by direct or indirect pressure or percussion during the reduction of cores and manufacture of chipped stone tools. They exhibit no evidence of post-detachment modification such as intentional retouch or utilization.

Flakes are recognized by the morphological characteristics of striking platforms, bulbs of percussion and ripple marks. This category includes decortication flakes, intermediate flakes, bifacial trimming flakes and chips. Decortication flakes have a minimum dimension of 2 cm and exhibit at least 50 percent cortex on their dorsal surface. They represent the initial stages of lithic tool manufacture and are often

referred to as primary decortication flakes. Intermediate flakes have a minimum dimension of 2 cm but exhibit less than 50 percent cortex on their dorsal surfaces. They represent the intermediate stages of lithic reduction and tool manufacture and include secondary decortication flakes as well as primary and secondary trimming flakes. Bifacial trimming flakes are recognized by the presence of multifaceted platforms which exhibit characteristic 'lipping' of the striking platform over the vertical surface of the flake. These elements are very thin and possess small negative flake scars on their dorsal surface. Bifacial trimming flakes are representative of the final stage of lithic tool manufacture and maintenance. Chips are flakes less than 2 cm in maximum dimension.

Small irregular shaped pieces of chert less than 3 cm in maximum dimension that lack characteristics of flakes are classified as shatter. Shatter does not bear evidence of conchoidal fracture. It may have resulted from breakage along the chert's natural cleavage planes, excess force applied during lithic reduction, heat treatment, treadage or noncultural factors such as freeze-thaw action. It is possible that some of the shatter actually represents unidentifiable flake fragments.

Determination of National Register Eligibility

In that consideration of National Register eligibility represents the fundamental aspect of and underlies the methodology of this project, we will review the National Register and determinations of National Register eligibility in the following section.

The centerpiece of the Federal preservation legislation is the National Register of Historic Places, created by the National Historic Preservation Act of 1966. Inclusion on the National Register provides protection for a cultural property from federal actions. Determining if a site is eligible, potentially eligible, or non-eligible for listing on the National Register is therefore a fundamental step in determining the management needs of a specific resource. This need provides the rationale for the proposed research program below Stockton Lake.

The criteria which determine whether a property is eligible for the National Register are set forth in 36CFR60.4:

National Register criteria for evaluation. The quality of significance in American history, architecture, archaeology, and culture is present in districts, sites, buildings, structures, and objects of State and local importance that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and

(a) That are associated with the events that have made a significant contribution to the broad patterns of our history; or

(b) That are associated with the lives of persons significant in our past: or

(c) That embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

(d) That have yielded, or may be likely to yield, information important in prehistory or history.

These criteria set forth in a neatly precise manner the substance of what is termed "legal significance" (Schiffer and Gumerman 1977:245). To state the situation concisely, if a property is adjudged to meet one or more of the above criteria, then it is eligible for inclusion in the National Register (i.e., it is a significant property) and therefore falls under the provenience of Federal cultural resource protection statutes. However, a determination of "significance" cannot be as simply and summarily assessed as the Federal Regulations seem to imply.

Because the Federal statutes which govern most cultural resource management projects revolve around determinations of significance and National Register eligibility, a substantial amount of literature is developing that explores these concepts (Dixon 1977; Glassow 1977; McGimsey 1979; Raab and Klinger 1977, 1979; Scovill et al. 1972; Sharrock and Grayson 1979; Wendorf 1978). What is "significant" varies from area to area and through time as research interests change. Promulgation of state and regional research designs, which are authorized by the National Historic Preservation Act of 1966, would provide a groundwork, however, archaeologists have to make the necessary determinations on the basis of what is already known, possible future developments, existing research designs, comparisons, and with the best overall professional judgement.

When dealing with determinations of eligibility for prehistoric archaeological resources criterion D is generally used. For sites bridging the prehistoric and historic periods, commonly referred to as protohistoric sites, and which are characterized by a paucity of historical documentation, criteria D remains the singlemost important criteria for evaluations of National Register significance. Criteria D requires a determination that an archaeological resource has provided or is capable of providing archaeological information important for our understanding of the historic or prehistoric past. When we enter the historic period and a growing diversity of historical documents, however, criteria A, B, and C are also important in assessing the significance of historical archaeological sites.

Determinations of eligibility based on criteria A and B rely on the association of significant events or persons with a specific site or sites. Determining significance in this case requires determining first that a particular event or person is indeed significant in history and second, that the significant event or person is demonstrably and directly associated with a specific site. Although the archaeological properties of a site are not in this case the reason for its significance, it is of importance to demonstrate that the site does exist and does possess an integrity which preserves to some degree its

condition at the time of association with a significant event or person.

Criterion C is important in considering historical archaeological sites, but is most directly utilized in considering the standing historical architecture components of a site.

The most widely accepted and commonly employed means of making determinations under criterion D is to assess a site's potential to contribute new or substantial data towards the resolution of one or more specific research questions. Increasingly, the general ability of sites to provide the type, quantity, and quality of data generally required to solve anthropological and other interdisciplinary problems is becoming of importance as the basis for determinations of significance (Glassow 1977). This approach recognizes the need to preserve archaeological data for research questions that have not yet been asked. In this case, the redundancy or non-redundancy of site data becomes an important consideration.

In making recommendations for the sites tested during the Downstream Stockton project four basic criteria were utilized. These are: (1) physical condition of the site, (2) the site content, (3) its relationship to regional research questions, and (4) the expected impact on the site. The first three will be used to evaluate the potential of the site in answering questions pertinent to the archaeology of the region and the fourth will be used in the process of making recommendations for mitigation or alternatives to mitigation if required.

Site condition is based on the amount and nature of post-depositional disturbance. Factors such as plowing, construction activities, road building, and natural erosion are taken into account. The site content is based on the archaeological features or remains which have been recorded or which can be expected to be present given the erosional and depositional conditions at the site. Included in the site content are such things as the presence or absence of a surface distribution, preservation of sub-surface cultural deposits or features, and the likelihood of recovering faunal or botanical remains or diagnostic artifacts. These factors and others will be examined to determine which materials a future researcher might have to work with in further evaluation of the site. The knowledge gained so far about the particular site will then be examined in relation to the present knowledge about the region specifically with regard to its potential for improving the data base regarding the historic past in the area.

These three major factors taken together will be used in making a judgment as to the relative significance of a particular site. In the case of a site judged not significant no further work will be recommended. This does not mean the site is of no interest as an archaeological manifestation but rather that further work would be unlikely to increase the data base already collected in survey and testing. Destruction of these sites will, therefore, not seriously affect the data base for the region, provided they have been adequately documented.

In the case of a site that is judged to be significant as a result of the survey and testing, there are then a limited number of options for mitigation. The preferred option is preservation (Wendorf 1978; King 1975) and in cases where this appears feasible it will be recommended. Preservation can include anything from simply withholding site location information to active protection of the site, dependent of the anticipated utilization of the area. The other options, in cases where planned activities will destroy or seriously endanger the site, is data recovery by excavation. The form of this excavation will vary in relation to the nature of the site and the research questions to be addressed. It could range from a controlled surface collection to a major block excavation.

VII. ARCHAEOLOGICAL SURVEY AND SITE TESTING

Larry J. Schmits, James A. Donohue and John M. Parisi

The intensive cultural resources survey and National Register testing program was conducted in portions of the Downstream Stockton Project area, Cedar County, Missouri by Environmental Systems Analysis, Inc. in the spring and summer of 1986. The survey included approximately 140 ac of slough easements along the Sac River and resulted in the location of one previously located site (23CE409) and five previously unrecorded archaeological sites. The five new sites have been assigned Archaeological Survey of Missouri (ASM) numbers 23CE423 through 23CE427 (Figure 5). Included are four prehistoric sites and a historic bridge (23CE424). The original contract was modified to include National Register testing at the four newly recorded prehistoric as well as at portions of 14 previously located sites within the Downstream Stockton U.S. Army Corps of Engineers slough easements. The sites tested include 23CE52, 23CE226, 23CE227, 23CE229, 23CE230, 23CE238, 23CE239, 23CE242, 23CE245, 23CE253, 23CE258, 23CE262, 23CE263, 23CE409, 23CE423, 23CE425, 23CE426 and 23CE427. As required by the Scope-of-Work, no archaeological testing was conducted in the areas of these sites located outside of the slough easements.

The areas surveyed in 1986 included 13 parcels adjacent to the Sac River, Bear Creek and Alder Branch (Figure 5). From south to north, these areas were designated as the Bear Creek, Alder Branch West, Alder Branch East, Landing Strip, Highway J North, Highway J South, Highway J West, Stockton Branch East, Stockton Branch West, Silver Creek, Keith Island, Horseshoe Bend South and Horseshoe Bend North Survey Areas. The survey of these areas was conducted in accordance with the methods discussed in the research design. The terrain covered included wooded stream banks, pasture and plowed fields. The approximate acreage of each area surveyed and the cultural resources located in each area are presented in Table 4.

The Bear Creek Survey Area includes approximately 25 ac situated along Bear Creek about 500 m above its confluence with the Sac River (Figure 5). The survey area includes the floodplain and low terraces of Bear Creek between the elevations of 770 and 780 ft above msl. The survey area averaged about 30 m in width along each bank and extended over a km in length. Both the eastern and western portions of Bear Creek area consisted of recently plowed and disked fields with excellent surface visibility. The eroded cutbank of Bear Creek was exposed to depths of 4 to 5 m below the ground surface and was inspected for buried sites. One prehistoric archaeological site, 23CE427, was located eroding from the western bank of Bear Creek at a depth of nearly 3 m below the surface. The base of a side-notched point was recovered indicating an Archaic cultural affiliation for this site.

The Alder Branch East Survey Area includes 37 ac of floodplain and

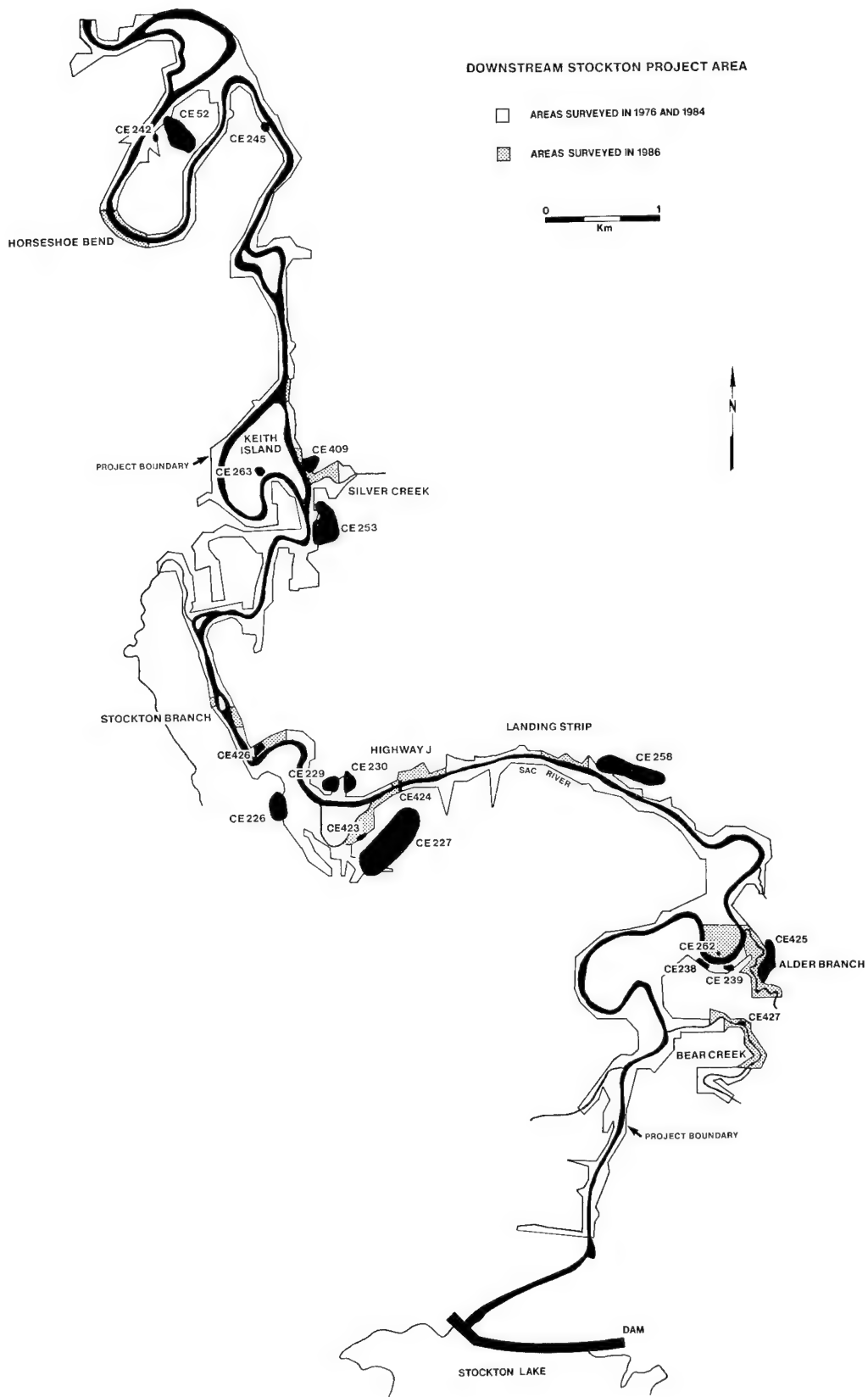


Figure 5. Location of the Downstream Stockton Project Survey areas and sites tested in 1986.

low terrace terrain along Bear Creek and Alder Branch (Figure 5). The eastern part of this area is a narrow zone extending along the banks of Alder Branch upstream from its confluence with Bear Creek. The area includes the low lying floodplain and terrace terrain between elevations of 770 and 780 ft above msl. The area immediately adjacent to the banks was covered with trees and weeds, while the remainder was plowed open fields. Surface visibility varied from 0 to 20 percent in the wooded area and up to 100 percent in the plowed fields. One newly recorded prehistoric site, 23CE425, was partially located within the slough easement along the east bank of Alder Branch.

Table 4. Survey areas and sites recorded in the Downstream Stockton Project area.

SURVEY AREA	ACRES SURVEYED	SITES RECORDED
Bear Creek	27	23CE427
Alder Branch	39	23CE262 23CE425
Landing Strip	9	None
Highway J	29	23CE423 23CE424 23CE426
Stockton Branch	7	None
Silver Creek	9	23CE409
Keith Island	5	None
Horseshoe Bend	13	None

The Alder Branch West Survey Area is located in a meander loop of the Sac River across from Alder Branch. This area includes floodplain and low terrace terrain along Bear Creek at an elevation of 770 ft above msl. Ground cover consisted of grass with surface visibility averaging about 30 to 40 percent. Shovel tests were placed at 30 m intervals along north to south transects in this area. One previously recorded site (23CE262), which consisted of an isolated projectile point recorded by Roper (1977), was located in the Alder Branch West Survey Area. During the 1986 survey no artifacts were located along the stream bank in the vicinity of 23CE262 and no new archaeological sites were recorded within the Alder Branch West Survey Area.

The Landing Strip Survey Area is located about 3 km downstream from

Alder Branch along the north bank of the Sac River (Figure 5). The 9 ac area consisted of a narrow strip of floodplain and low terrace terrain about 350 m in length and 30-100 m in width between the elevations of 760 and 770 ft above msl. The eastern portion of the area was covered by fescue grass and the western edge by hardwood forest. Surface visibility ranged from 30 to 50 percent. A transect of shovel tests was placed down the center of the area at 30 m intervals, however no archaeological sites were encountered. Previously recorded site 23CE258 is located adjacent to the survey area's eastern boundary.

The Highway J Survey Area included three parcels along the Sac River which total nearly 29 ac (Figure 5). The segment along the northern bank of the Sac River, referred to as the Highway J North Survey Area, was 350 m in length and varied from 30 to 100 m in width. It includes floodplain terrain of the Sac River and a small unnamed intermittent stream. This area is covered by hardwood forest and had a surface visibility ranging from 40 to 60 percent. One newly recorded historic site, 23CE424, was located near the western edge of the survey area. It consists of a span of the old Highway J metal truss bridge.

The Highway J South Survey Area is located along the eastern edge of a former channel of the Sac River and includes floodplain and low terrace terrain between elevations of 760 and 770 ft above msl. The area included a cultivated field planted in corn which had excellent surface visibility. One newly recorded site, 23CE423, was located. It consists of a light prehistoric lithic scatter most of which is located within the U.S. Army Corps of Engineers slough easement.

The Highway J West Survey Area is located along the northern bank of the Sac River about 500 m west of Highway J. It is about 300 m in length and 60 m in width and is located between 760 and 775 ft above msl. It was covered with dense grass and bottomland forest with poor surface visibility. Site 23CE426 was found eroding from a cutbank of the Sac River between 40 and 60 cm below surface. The recovery of a corner notched dart point from the site indicates the presence of a Late Archaic component. Aaron Brauer, a local artifact collector, has also recovered a number of points from the site including a Rice Lanceolate form which dates to the Early or Middle Archaic periods (Chapman 1975). Brauer's collection indicates that more deeply buried components are likely present at 23CE426. Examination of the cutbank located one flake 2 m below the surface which may be associated with one of the earlier occupations, however no other deeply buried cultural materials were found.

The Stockton Branch Survey Area is located about 300 m downstream from the Highway J West survey area and covers a total area of seven ac (Figure 5). The eastern area is a narrow strip of floodplain and low terrace landforms covered with bottomland forest that is located between 760 and 770 ft above msl. The western portion of the Stockton Branch area is a steep side slope ranging between 760 and 800 ft above msl. Vegetation consisted of hardwood forest and visibility was poor. No sites were recorded in either the Stockton Branch East or West Survey areas.

The Silver Creek Survey Area is located at the confluence of Silver Creek and the Sac River and covers about 9 ac (Figure 5). The area includes floodplain and low terrace terrain along the Sac River and Spring Creek between the elevations of 760 and 770 ft above msl. Ground cover consisted of mature bottomland forest along the streambank and a wheat field located on the adjacent low terrace. Visibility was generally poor ranging from 0 to 20 percent. Areas of good visibility were limited to a field road at the eastern edge of the survey area. One previously recorded site, 23CE409, is partially located within this survey area, although most of the site is located outside the slough easement. The site was originally reported as a multicomponent Late Archaic and Woodland campsite. Late Archaic corner notched and stemmed points were recovered from the surface of 23CE409 during the 1986 survey.

The Keith Island Survey Area consists of a small 5 ac linear strip of land covered by floodplain forest along the east bank of the Sac River just north of Keith Island (Figure 5). Surface visibility ranged from 40 to 60 percent. No sites were located.

The Horseshoe Bend North and South Survey Areas are situated along opposite banks of the Sac River at the southern edge of Horseshoe Bend (Figure 5). Both areas consist of linear strips of floodplain and low terrace terrain along the Sac River. The areas consisted of freshly plowed fields with excellent surface visibility. No archaeological sites were located.

In summary, the intensive cultural resources inventory of approximately 140 ac of U.S. Army Corps of Engineers slough easement land was conducted in the late spring and early summer of 1986. The area inventoried consists of 13 parcels located along the Sac River, Bear Creek and Alder Branch below Stockton Dam. A total of six sites were located as a result of the inventory. One of these, 23CE409, was a previously recorded Late Archaic and Woodland campsite. One other previously recorded site located in the Alder Branch West Survey Area, 23CE262, was not located in the 1986 survey. The five newly recorded sites were assigned site numbers 23CE423 through 23CE427. Two of the sites, 23CE423 and 23CE425, consisted of prehistoric surface lithic scatters. Two others, 23CE426 and 23CE427, were located eroding from cutbanks of the Sac River and Bear Creek, respectively. 23CE426 contains a buried Late Archaic component while 23CE427 contains a Late Archaic, as well as a more deeply buried late Middle Archaic component. The remaining site, 23CE424, was the partially destroyed historic metal truss bridge that formerly spanned the Sac River along old Highway J.

Following completion of the survey, the original contract was modified to include National Register testing at 23CE238, 23CE425 and 23CE426 to bring the total of tested sites to 18. Thus, the portions of sites 23CE52, 23CE226, 23CE227, 23CE229, 23CE230, 23CE238, 23CE239, 23CE242, 23CE245, 23CE253, 23CE258, 23CE262, 23CE263, 23CE409, 23CE423, 23CE425, 23CE426 and 23CE427 within the U.S. Army Corps of Engineers easement were evaluated for their National Register eligibility. No further investigations were conducted at the historic bridge, 23CE424. The results of the survey and testing program are presented below.

23CE52

23CE52 is located on a low terrace within a meander loop of the Sac River referred to as Horseshoe Bend, approximately 1 km southeast of the Caplinger Mills dam (Figure 6). The site was originally recorded by H. F. Man in 1962. It was relocated by Roper in 1976 who described it as a lithic scatter situated on a slight rise on the floodplain of the Sac River. The site was reported to cover an area of approximately 2000 sq m and was thought to be completely located within the U.S. Army Corps of Engineers slough easement. Two projectile points, four biface fragments, one scraper, two edge-modified flakes, three cores and 74 pieces of debitage were recovered from the surface. The points were insufficiently complete to determine the cultural affiliation of the site (Roper 1977).

Description of the Investigations

The 1986 investigations at 23CE52 included pedestrian survey, mapping, surface collection and test excavations (Figure 6). Survey indicated that the site consisted of a light to moderate prehistoric lithic scatter extending over a 15 ac area on a low terrace defined by the 766 ft contour. The site area was freshly planted in beans and had an excellent surface visibility of 90-100 percent. The major portion of the site was located outside of the U.S. Army Corps of Engineers slough easement. The distribution of artifacts across the site suggests that the site represented a series of overlapping occupation or activity areas.

A transect of one m test units was excavated at 20 m intervals across the northwestern edge of the site to a depth of 80 cm below surface (Figure 6). Except for Test Unit 3, artifacts were restricted to the upper 10 cm of the soil profile. A fairly dense scatter of burnt rock and lithic debitage extended to a depth of 35 cm in Test Unit 3.

A similar soil profile was encountered in all test units. An upper Ap horizon consisting of a brown silt loam extended from the surface to a depth of 20 cm. A transitional A-B horizon consisting of a brown silt loam extended from a depth of 20 to 40 cm and was underlain by a dark yellowish brown silty clay loam B horizon extending from a depth of 40 to 80 cm+. This profile is similar to that described for the Ashton soil series. Cultural materials were recovered from the disturbed Ap horizon in Test Units 2, 3 and 4, while undisturbed cultural deposits were located in the A-B horizon in Test Unit 3.

Artifact Assemblage

The artifact assemblage recovered from 23CE52 includes four projectile points, two biface fragments, one modified flake, 26 pieces of debitage and 42 pieces of unworked stone (Table 5). Two projectile points were from the surface and one each from the upper 10 cm of Test Units 3 and 4. One is a medium-sized corner notched form with an

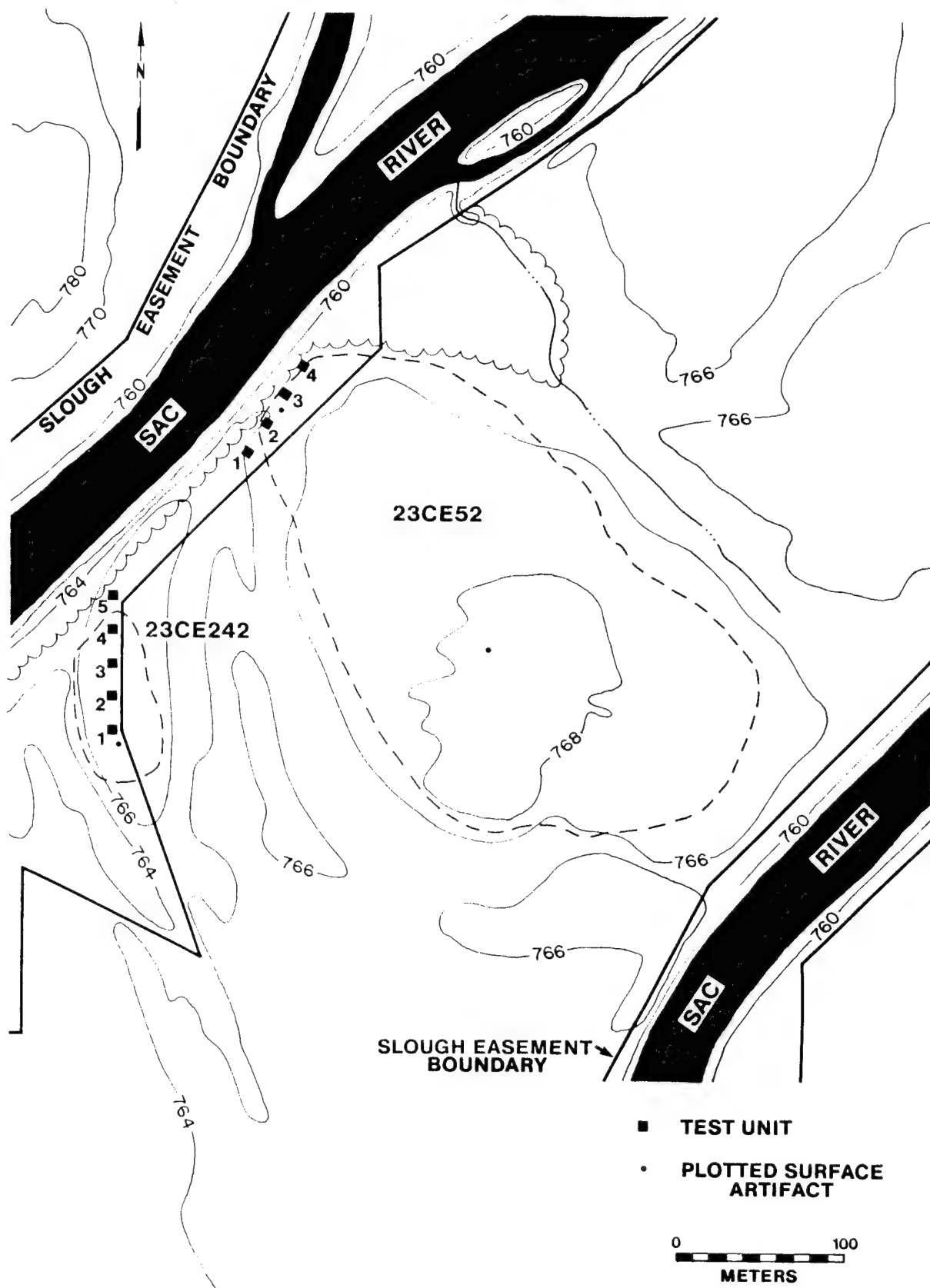


Figure 6. Location and plan view of the test excavations at 23CE52 and 23CE242.

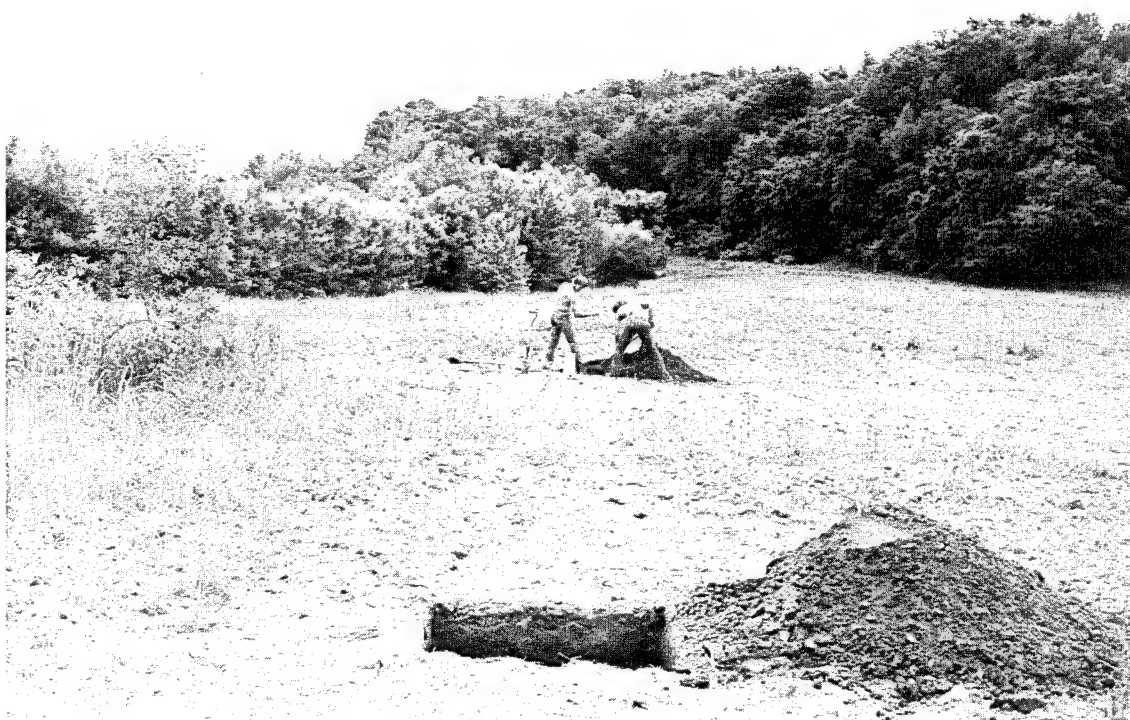


Figure 7. General views of 23CE52 and 23CE226. View to the northwest of the survey in progress at 23CE52 (upper). View to the south of excavations in progress at 23CE226 (lower).

expanding stem and a slightly convex base made from a broad subtriangular Burlington chert preform with a plano-convex cross-section (Figure 8a). This point is similar to the Afton Corner Notched type. The second is a medium-sized corner notched point with a straight stem and convex base (Figure 8b). It was made from a broad subtriangular Jefferson City chert preform with a lenticular cross-section. This point has similarities to both the Smith Basally Notched type and the Stone Square Stemmed type. Both of these points are similar to forms dating to the Late Archaic period. The point recovered from Test Unit 3 is a small corner notched form with a slightly concave base made from a triangular Burlington chert preform with a plano-convex cross-section (Figure 8c). The notches are deep, forming a long expanding stem. This point is similar to points dated at 2350 years B.P. at the Little Green Heron site (23GR535), located to the south in Greene County, Missouri (Parisi 1985). The point from Test Unit 4 is a small corner notched form with a slightly expanding stem and a fractured base (Figure 8d). Similar Late Archaic forms have been dated between 3000 and 2350 years B.P. at the Little Green Heron site (Parisi 1985). This small point also resembles the Scallorn type which is generally dated to the Late Woodland period. The typological ambiguity of this form raises the possibility that both Late Archaic and Late Woodland components are represented at 23CE52 although if a Late Woodland occupation was present it was not a very intensive occupation.

Table 5. Artifact assemblage from 23CE52.

		TEST UNITS			
	SURFACE	2	3	4	TOTAL
CHIPPED STONE TOOLS					
Projectile Points	2		1	1	4
Biface Fragments			2		2
Modified Flake			1		1
Total	2		4	1	7
LITHIC MANUFACTURING DEBRIS					
Chunks			2	1	3
Flakes		1	2	1	4
Chips		1	13	1	15
Shatter		4			4
Total		6	17	3	26
UNWORKED STONE			42		42
TOTAL	2	6	63	4	75

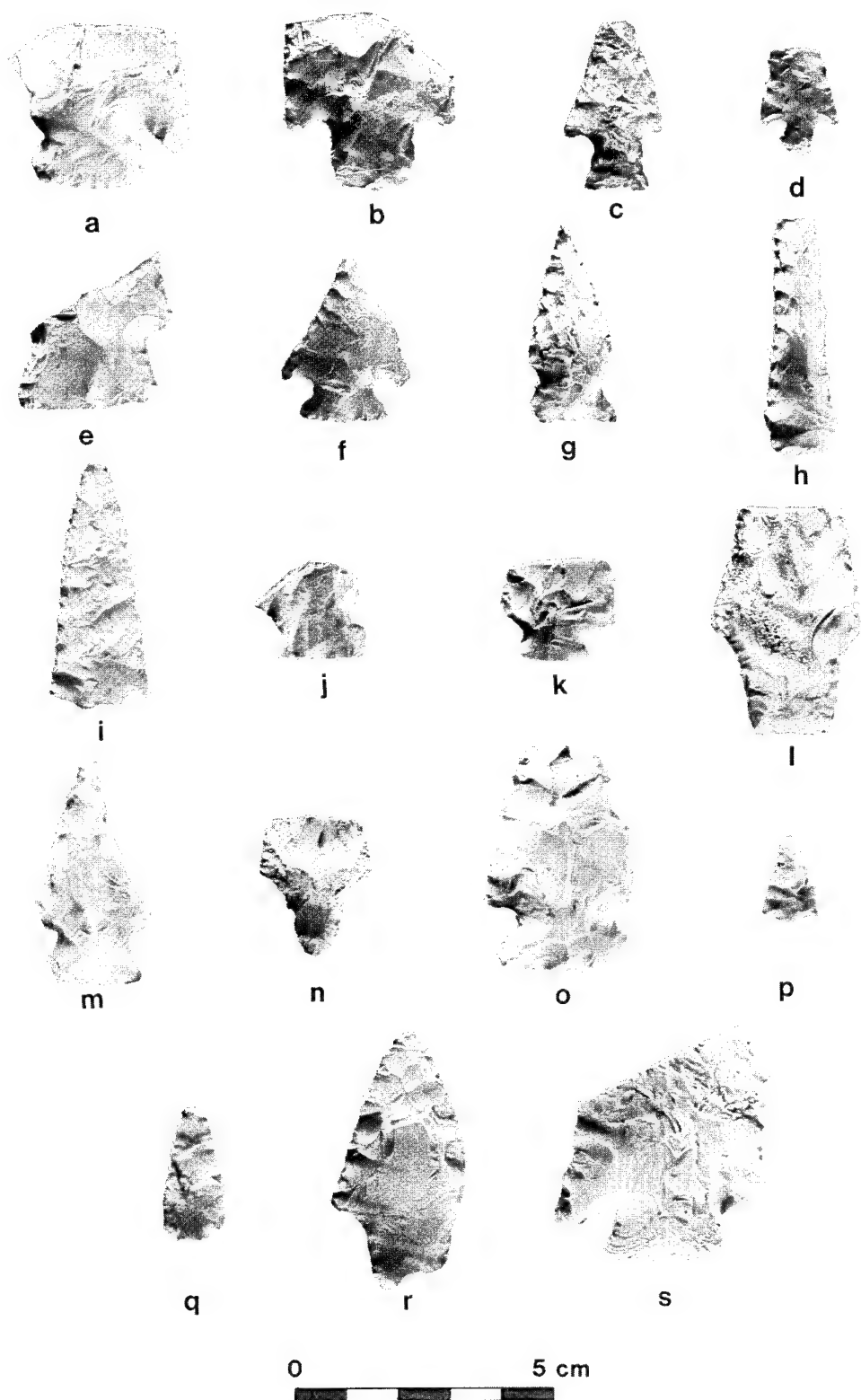


Figure 8. Projectile points from 23CE52, 23CE226, 23CE227, 23CE229 and 23CE238: a-d, corner-notched and stemmed points from 23CE52; e-h, expanding stemmed, corner notched and side notched points and drills from 23CE226; i-j, points from 23CE227; k, point from 23CE229; l-s points from 23CE238.

Discussion

23CE52 is a large scatter of lithic debris extending over a low terrace within Horseshoe Bend. The site appears to consist of a series of overlapping residential camp occupations, rather than a single large base camp or village. This interpretation is based on the overall low density and diversity of tool forms which includes only a small number of projectile points, biface fragments and modified flakes. Numerically, the largest artifact category is unworked stone, probably related to cooking or food preparation activities. The site lacks obvious midden staining or dense clusters of debris suggestive of specialized refuse disposal. The location of 23CE52 within the large meander of Horseshoe Bend indicates that the prehistoric occupation focused on exploitation of the adjacent floodplain-forest edge biotic communities. A large part of the site is located outside of the U.S. Corps of Engineers slough easement and the inferred site function is a preliminary estimate based on limited data.

The site appears to have been principally occupied during the Late Archaic or terminal Late Archaic period at approximately 3000 to 2500 years B.P. based on the projectile points recovered. The recovery of one small arrow point may also indicate the presence of a later Late Woodland occupation. Intact and concentrated cultural deposits extend to a depth of 35 cm in the vicinity of Test Unit 3. The portion of 23CE52 located within the U.S. Army Corps of Engineers slough easement is not eligible for the National Register. However, this small area comprises less than three percent of the total site area and is not sufficiently representative of the entire site to make a determination of eligibility. Further testing of the portion of the site located outside of the slough easement will be required to make a firm determination of the National Register status of the site. Since significant deposits do not occur within the U.S. Army Corps of Engineers slough easement, no future archaeological work is recommended for site 23CE52.

23CE226

23CE226 is located on a low terrace between the footslopes of the western Sac River valley wall and a former channel of the Sac River (Figure 9). The modern channel of the Sac River is situated approximately 180 m east of the site. At the time the site was initially recorded by Roper in 1976 it was in a disked field and two lithic scatters designated Areas A and B and covering an area of about 650 sq m were defined. Area B was located within the U.S. Army Corps of Engineers slough easement while Area A was located on the easement boundary. Artifacts recovered from the surface in 1976 include one Cahokia Notched point from Area B, six edge-modified flakes, one core and 51 pieces of debitage. Roper (1977) interpreted the site to be a Late Woodland component.

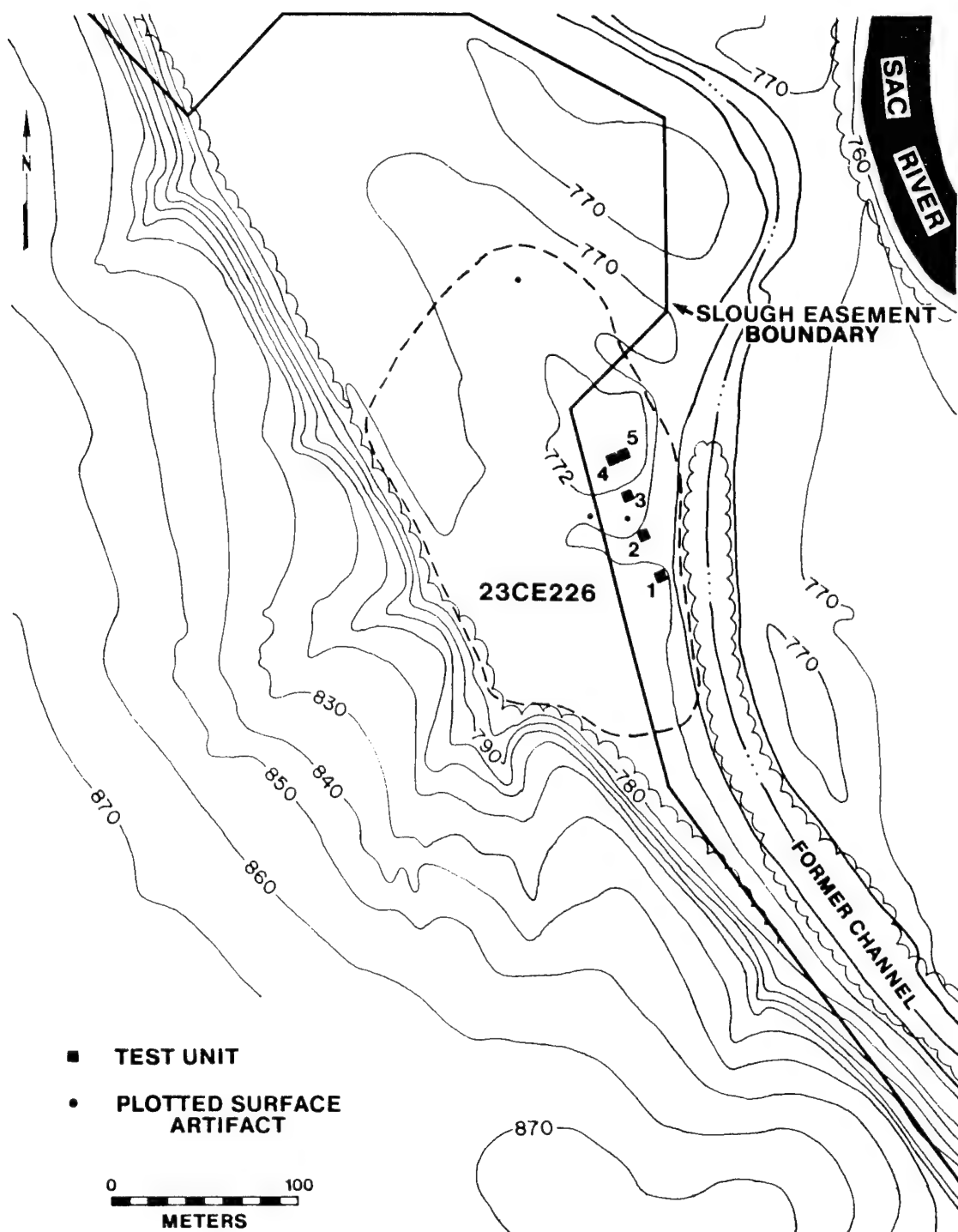


Figure 9. Location and plan view of test excavations at 23CE226.

Description of the Investigations

The 1986 investigations at 23CE226 included pedestrian survey, site mapping, surface collection and test excavations (Figure 9). The areal extent of the site was indicated by a moderate to dense scatter of lithic debris extending over a 10 ac (40,000 sq m) area in a freshly disked field with excellent surface visibility. The distribution of surface debris was continuous across the low terrace rather than consisting of the two small discrete areas originally reported by Roper. Most of the site is located outside of the U.S. Army Corps of Engineers slough easement. The portion within and immediately adjacent to the government easement contained a relatively large number of cores, as well as cortical flakes and chunks, indicating that a major activity at the site was the procurement and initial reduction of local Mississippian cherts which outcrop along the western edge of the site.

A transect of four one m test units was excavated to a depth of 80 cm across the site within the slough easement (Figure 9). A fifth test unit was excavated adjacent to Test Unit 4 to expose a feature encountered in that unit. A dense cultural deposit extended from the surface to a depth of 35 cm. No artifacts were recovered below a depth of 40 cm. The stratigraphy of the site consists of an upper Ap horizon consisting of brown to dark brown silt loam and extending from the surface to a depth of 20-30 cm. The underlying B horizon consists of a brown to dark yellowish brown silty clay loam which extended from 20-30 cm to 80 cm+ below surface. Cultural debris was recovered from the disturbed Ap horizon in Units 1, 2, 3, 4 and 5. Intact cultural deposits were encountered in the upper B horizon of Test Units 4 and 5 from 20-40 cm below surface.

Cultural Feature

One cultural feature, designated as Feature 1, was located in Test Units 4 and 5 at a depth of 20 cm below surface. It consisted of an ash stain containing a light scatter of charcoal, carbonized nutshells and burnt soil associated with a more concentrated area of burnt soil. Feature 1 was approximately 115 cm in length by 60 cm in width and extended to a depth of 40 cm below surface. The feature appears to be a hearth. The proximal section of a projectile point, a small charcoal sample and a few fragments of carbonized nutshells were recovered from the feature.

Artifact Assemblage

The artifact assemblage from 23CE226 includes three projectile points, one bifacial drill, one bifacial celt, one bifacial gouge, one bifacial blank, three biface fragments, two flake scrapers, 13 modified flakes, 164 pieces of lithic manufacturing debris, one nutting stone, eight carbonized nutshells and eleven unworked stones (Table 6).

The projectile point from Feature 1 is a proximal section of an expanding stemmed point with a straight base made from a triangular Burlington chert preform with a lenticular cross-section (Figure 8e).

Although similar to points variously dated to the late Middle Archaic in the Kansas City area (Schmits 1986), the shallow depth of the specimen and association with Late Archaic points indicates a Late Archaic affiliation. The two small dart points and drill recovered from the surface include a small corner notched form with an expanding stem and slightly convex base made from nonlocal grayish blue broad triangular chert preform with a plano-convex cross-section (Figure 8f). The second specimen is a small side notched point with a straight base made from a triangular Burlington chert preform with a lenticular cross-section (Figure 8g). Both closely resemble forms dated between 3000 and 2500 years B.P. at the Little Green Heron site (Parisi 1985). The drill is a proximal section of a slightly expanding stem form with a slightly convex base made from heated Burlington chert (Figure 8h).

Table 6. Artifact assemblage from 23CE226.

		TEST UNITS					
	SURFACE	1	2	3	4	5	TOTAL
CHIPPED STONE TOOLS							
Projectile Points	2					1	3
Bifacial Drill	1						1
Bifacial Celt						1	1
Bifacial Gouge	1						1
Bifacial Blank	1						1
Biface Fragments		3					3
Flake Scrapers		1		1			2
Modified Flakes				4	5	4	13
Total	5	4		5	5	6	25
LITHIC MANUFACTURING DEBRIS							
Cores		1					1
Chunks		1		2	6	3	12
Flakes		2		3	14	17	36
Chips		35	1	4	16	39	95
Shatter		5	1	1	7	6	20
Total		44	2	10	43	65	164
CARBONIZED NUT-SHELLS					8		8
GROUND STONE TOOLS		1					1
UNWORKED STONE		5			6		11
TOTAL	5	54	2	15	62	71	209

Discussion

23CE226 is a moderate to heavy lithic scatter extending over an approximately 40,000 sq m area on a terrace of the Sac River. It is larger than originally reported and consists of a continuous scatter of lithic debris rather than two discrete areas. Based on the results of the 1976 and 1986 investigations, it appears to be multicomponent site with both Late Archaic and Late Woodland or Mississippian components present. The Late Archaic component consists of an intact concentrated cultural deposit which extends to a depth of 40 cm. An intact feature consisting of a hearth or roasting pit was located in this component along with diagnostic artifacts suggesting the presence of a late Late Archaic component. This component probably dates to around 2500 years B.P.

Roper (1977) initially interpreted 23CE226 as a Late Woodland extractive camp. However, the present investigations indicate the site primarily served as a Late Archaic residential camp although the presence of multiple components and the limited data available preclude a definitive statement as to the nature of occupation represented. The site is strategically located at the base of a bluff adjacent to a former channel of the Sac River. This location would have provided ready access to both upland and lowland biotic resources while also affording access to the chert which outcrops along the bluff. Access to the uplands is provided by a ravine to the southwest of the site.

A relatively wide variety of tools were recovered including projectile points, a drill, a celt, a gouge scraper, a blank, biface fragments and modified flakes indicating that both lithic manufacturing and maintenance activities were performed at the site. Activities represented by these tools would have included hunting, butchering, hide preparation, woodworking, piercing, drilling, engraving as well as tool manufacture and maintenance. The concentrated area of cores and primary lithic debris at the southern edge of the site provides additional evidence of the importance of lithic processing at the site. The hearth is associated with food preparation as indicated by the recovery of charred nutshells. The nutshells in turn indicate that gathering was conducted from the site and that it was occupied during the fall or early winter.

In summary the strategic location, the lack of midden staining, the apparently isolated features, the focus on chert procurement, the diverse tool kit and lack of specialized refuse disposal substantiate the interpretation of 23CE226 as a residential campsite rather than a base camp or extractive camp. The large size of the site is more in line with that expected for a base camp occupation, but this may simply be related to the presence of multiple components or multiple occupations associated with a single component. The chert outcrop at the site provided a desirable immobile resource which would have made the site an attractive location for prehistoric settlement.

Since the late Late Archaic period is relatively unknown in southwest Missouri, the site has the potential to provide significant information regarding regional research questions. Furthermore specialized Late Archaic lithic procurement and manufacturing appear to

have been conducted. This site type is a poorly known element of Late Archaic settlement patterns in the area. Therefore, 23CE226 is recommended to be eligible for the National Register. The site is presently being impacted by cultivation and not directly by bank erosion or hydropower releases. Since there is no direct federal impact, the U.S. Army Corps of Engineers has no legal obligation to protect the site.

23CE227

23CE227 is located on a low terrace approximately 250 m southeast of the confluence of an intermittent stream with an old channel of the Sac River near the Highway J bridge (Figure 10). The project easement roughly parallels the intermittent stream which bisects the southern part of the site. The site was first recorded by Roper in 1976 and at that time, was located within a cultivated field and described as a lithic scatter covering an area of at least 35 ac along a low terrace of the Sac River. The major part of the site is located outside of the U.S. Army Corps of Engineer slough easement. Artifacts recovered during the 1976 investigations included nine projectile points, 22 biface fragments, four edge-modified flakes, 14 cores, 574 pieces of debitage and one mano. The points included one Jackie Stemmed, two Smith Basal Notched, one Etley, one Scallorn, one "lobed" form and three small unclassified dart points (Roper 1977:56). These types indicated that components dating to the Middle Archaic, Late Archaic and later part of the Woodland periods were present. Cultural deposits were reported to a depth of 50 cm (Roper 1977:35). Clark Montgomery, Jr. has also found a number of Late Archaic points on the surface including Stone Square Stemmed, Smith Basal Notched and Etley forms.

Description of the Investigations

The 1986 investigations at 23CE227 included survey, mapping, surface collection and test excavations within the area of the site in the U.S. Army Corps of Engineers slough easement (Figure 10). Since most of the site is located outside the slough easement, the boundaries of the site could not be precisely determined. A light to moderate lithic scatter extends along both sides of the small intermittent drainage within the slough easement for a distance of about 200 m from east to west. The field to the north was planted in wheat which obscured surface visibility while better visibility was afforded along its southern edge which was planted in corn. Most of the artifacts were recovered from the southern edge of the intermittent stream.

Two parallel transects of ten one m test units were excavated at alternating 20 m intervals across the easement to depths ranging between 80 and 100 cm below surface (Figure 10). Test Units 1 and 5 were

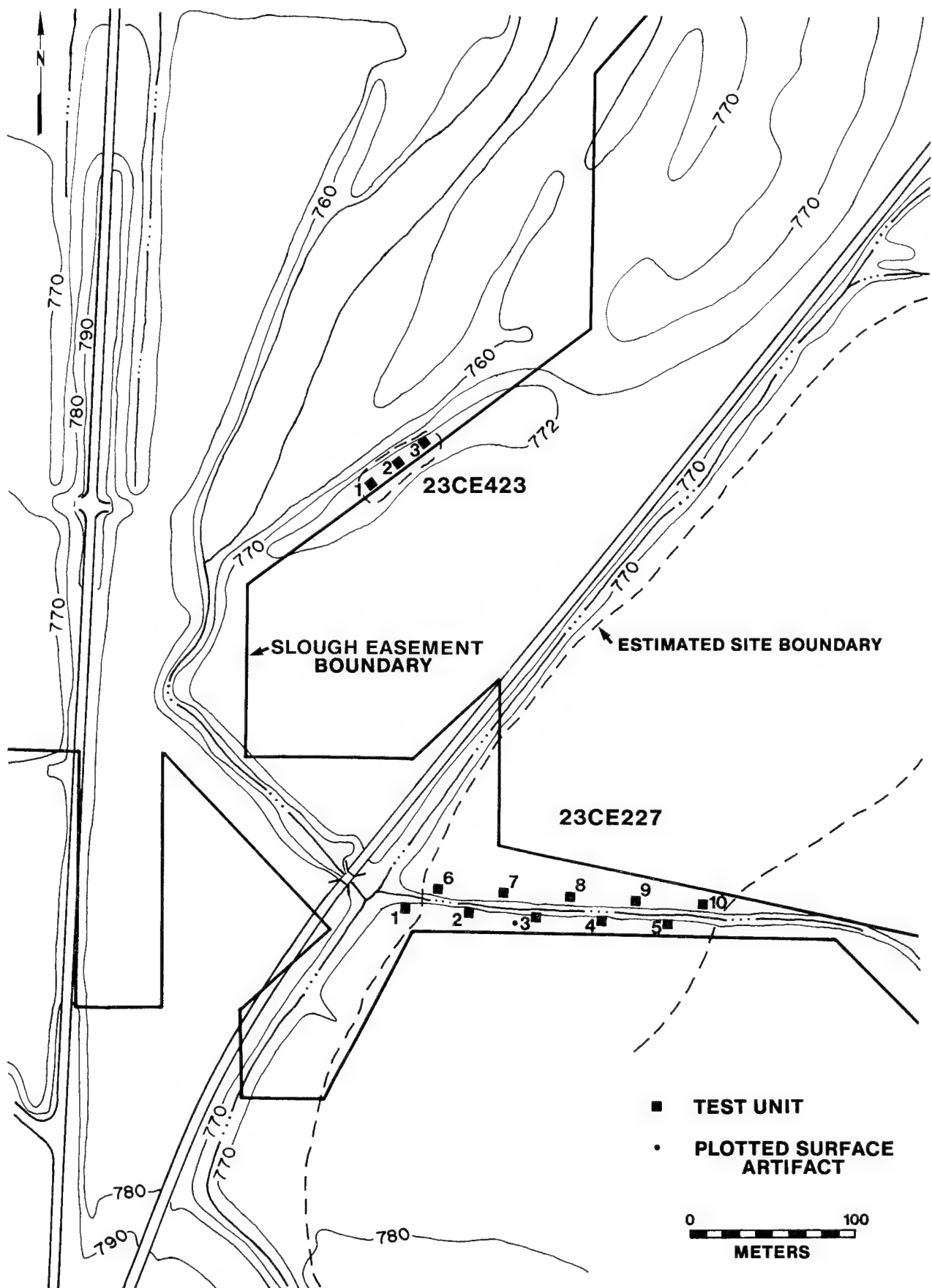


Figure 10. Location and plan view of test excavations at 23CE227 and 23CE423.

sterile while Test Units 2, 3, 4, 6 and 10 contained a light scatter of lithic debris extending to a depth of 20 cm. Test Units 7, 8 and 9 contained more deeply buried material which extended to 60 cm in Test Unit 7, to 90 cm in Test Unit 8 and to 40 cm in Test Unit 9.

The soil profile encountered in the test units varied somewhat across the site, but generally consisted of a dark brown to dark grayish brown silt loam extending from surface to a depth of 30-40 cm. The upper 20 cm of this horizon consisted of a disturbed Ap horizon. An underlying dark brown to dark yellowish-brown clayey silt loam to silty clay loam extends from 30-40 cm below surface to 100 cm+ below surface. Cultural materials in Test Units 2, 3, 4, 6 and 10 were restricted to the disturbed Ap horizon. Intact cultural deposits in Units 7, 8 and 9 were recovered from the upper B horizon.

Artifact Assemblage

The artifact assemblage recovered from 23CE227 includes two projectile points, two bifacial blanks, six biface fragments, one modified flake, 124 pieces of lithic manufacturing debris, one ground stone fragment, four pieces of burnt clay and five pieces of unworked stone (Table 7). The two projectile points, four of the biface fragments and the ground stone tool fragment were recovered from the surface.

One of the points is a distal section of a medium-sized corner notched form with a serrated edge made from a triangular heated Burlington chert preform (Figure 8i). The second is the proximal section of a side notched dart point made from an oolitic chert which also appears to have been heated (Figure 8j). Both specimens are insufficiently complete to permit classification. One of the biface fragments consists of the distal segment of small serrated arrow point similar to the Scallorn type. This point was made from Burlington chert which appears to have been heat treated and indicates the presence of a Late Woodland component at the site.

Discussion

23CE227 is a large multicomponent site partially located within the U.S. Army Corps of Engineers slough easement. Based on the 1976 and 1986 investigations, the site contains Middle Archaic, Late Archaic and Woodland components. The point fragments recovered from the 1986 investigations are insufficiently complete for classification, but appear to include a side notched Middle Archaic form, a corner notched Late Archaic form and an arrow point indicating a Late Woodland or Mississippian component. The majority of artifacts from the site collected by Clark Montgomery Jr. are Late Archaic Sedalia phase forms. The 1986 testing indicates that within the slough easement intact artifacts are generally restricted to the northern portion of the drainage which cross-cuts the area of the site. Most of the cultural material occurs in the upper 40 to 50 cm and probably dates to the Late

Table 7. Artifact assemblage from 23CE227.

		TEST UNITS									
	SURFACE	2	3	4	6	7	8	9	10	TOTAL	
CHIPPED STONE TOOLS											
Projectile Points	2									2	
Bifacial Blanks						1	1			2	
Biface Fragments	4					1	1			6	
Modified Flake		1								1	
Total	6	1				2	2			11	
LITHIC MANUFACTURING DEBRIS											
Chunks			2			1				3	
Flakes			1			9	9	3		22	
Chips		4	7	1	1	50	25	2	2	92	
Shatter			3			1	1		2	7	
Total		4	13	1	1	61	35	5	4	124	
GROUND STONE TOOL	1									1	
BURNT CLAY					4					4	
UNWORKED STONE			4			1				5	
TOTAL	7	5	17	1	5	64	37	5	4	145	

Archaic period. Limited evidence of a more deeply buried deposit was encountered at a depth of 60-90 cm in Test Unit 8 and perhaps dates to the earlier portion of the Late Archaic period.

On the basis of its size, location, overall density and diversity of artifacts present, Roper (1977) suggested that 23CE227 functioned as a multicomponent base camp. Even though only a small portion of the estimated 140,000 sq m of the site was investigated in 1986, the available data provide some support for Roper's interpretation. However, the identification of the site as a base camp remains tentative. It may also represent a series of residential camps. The site is situated on a low terrace about midway between the uplands, located to the south, and the Sac River which flows to the north. This location would have provided ready access to both upland and floodplain forest biotic zones.

The present investigations found the artifact density within the slough easement to be highly variable with an average of only about 14 artifacts per test unit. However, almost 90 percent of the artifacts were recovered from only three adjacent units (Test Units 3, 7 and 8) suggesting that differential usage or specialized refuse disposal occurred at the site. Midden staining is also indicated by the dark

brown color of the upper soil horizon, probably as a result of higher organic content.

The artifacts recovered during the 1986 investigations include projectile points, blanks, biface fragments, a modified flake and one ground stone tool. Roper reported a similar, but more numerous array of tools recovered from the surface in 1976. Overall, the tools recovered from the site indicate an emphasis on hunting and butchering activity as well as lithic tool manufacture and maintenance. The debitage recovered in both 1976 and 1986 is dominated by smaller tertiary elements or bifacial trimming flakes, further indicating the importance of tool maintenance at the site. The ground stone tools are most likely associated with seed or vegetal food processing and suggest that gathering of floral resources was conducted from the site. No features were encountered during the 1986 investigations, but the recovery of burnt clay from Test Unit 6 indicates that a hearth or possibly a dwelling was situated nearby.

The National Register status of 23CE227 cannot be determined based on the investigation of the limited portion of the site within the U.S. Army Corps of Engineers slough easement. Most of the site is located outside of the slough easement boundary and further investigation of this area of the site would be required to provide a firm determination of eligibility. Since the area of the site located within the slough easement does not contain extensive intact deposits, further archaeological work at the site is not a high management priority.

23CE229

23CE229 is located on a low terrace approximately 50 m north of the Sac River and west of the Highway J bridge (Figure 11). The site was recorded by Roper in 1976 and at that time was in pasture and was described as a lithic scatter covering a 22 ac area on a low terrace. Only the southern and southeastern portion of the site are located within the U.S. Army Corps of Engineers slough easement. Artifacts recovered from the 1976 survey included three projectile points, two scrapers, two bifacial blanks or preforms, one adze, 11 biface fragments, seven edge-modified flakes, 11 cores and 207 pieces of debitage. The three points were contracting stemmed Langtry forms indicating the presence of a Woodland component. Roper (1977) classified 23CE229 as a base camp or village and suggested that it was similar to the Flycatcher and Dryocopus sites in Stockton Lake excavated by Kaplan (1967) and Calabrese et al. (1969) and the Infinity site in the Elk City Reservoir of southeast Kansas reported by Marshall (1972).

Description of the Investigations

The 1986 investigations at 23CE229 consisted of pedestrian survey, mapping and test excavations (Figure 11). The surface was covered with grass and a few pieces of debitage were visible. Two perpendicular

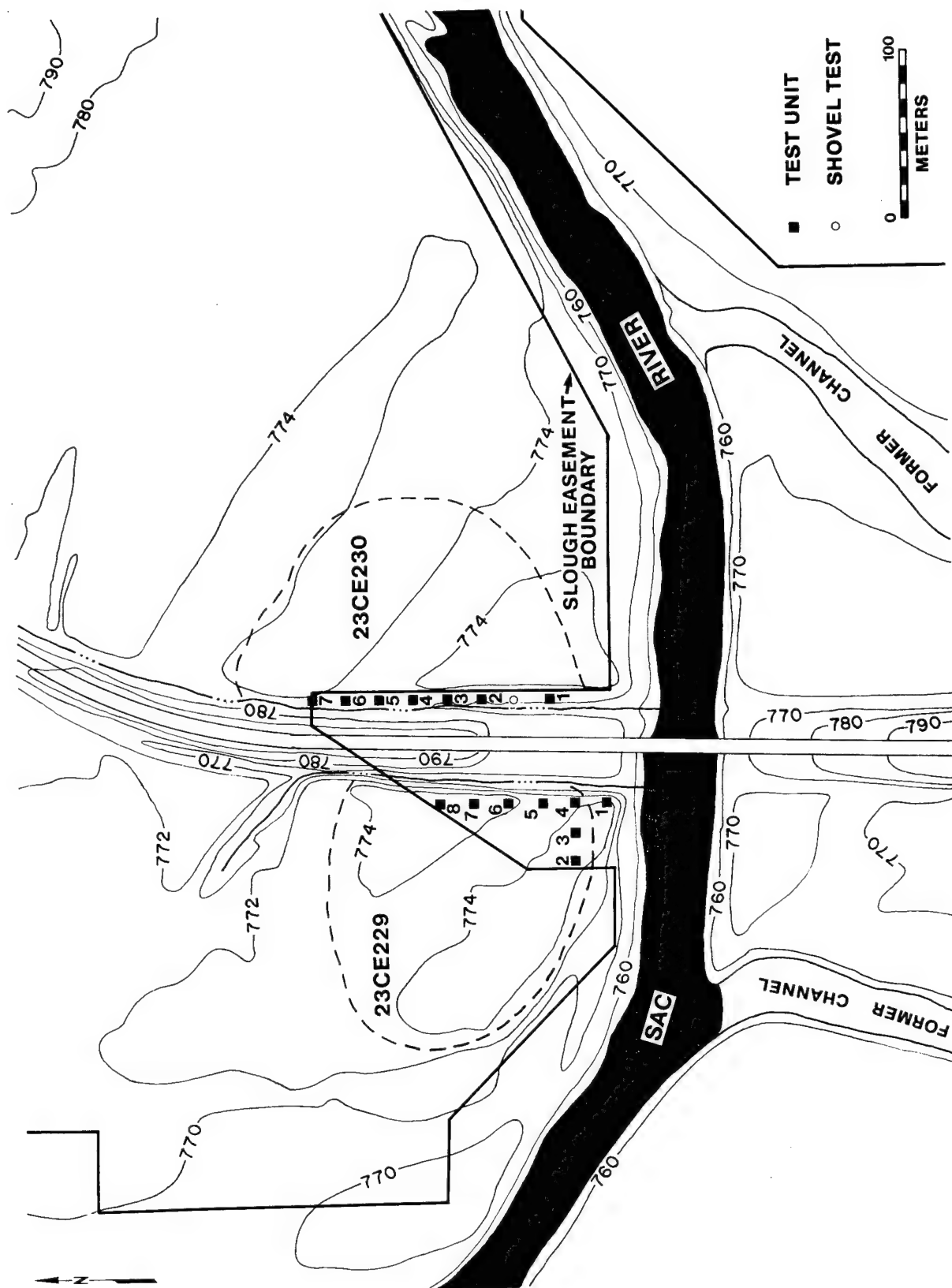


Figure 11. Location and plan view of test excavations at 23CE229 and 23CE230.

transects of one m test units were excavated at 20 m intervals across the slough easement to a depth of 80-100 cm below surface (Figure 11). Cultural debris was restricted to the upper 60 cm of the soil profile. Test Unit 2 was sterile while Test Units 1, 3, 4 and 7 contained light scatters of artifacts within the upper 40 cm. Test Units 5, 6 and 8 contained artifacts to a depth of 60 cm.

The soil profile of Test Units 1 through 4 was markedly different from that encountered in Units 5 through 8. A sandy silt mixed with river gravel was found in Units 1 through 4 indicating that this area of the site was once in or adjacent to the river channel. Only 16 artifacts were recovered from these units and most of these were from Test Unit 4. Test Units 5 through 8 encountered an old Ap horizon consisting of a dark yellowish brown silt loam which extended to a maximum depth of 20 cm below the surface. Below this horizon a dark yellowish brown silty clay B horizon extended to 80 cm+ below surface. Moderate densities of lithic debris were recovered from the disturbed upper 20 cm of Units 5 through 8. An intact and more concentrated cultural deposit was encountered from 30 to 50 cm below surface in the B horizon of these units. Cultural materials were most concentrated in the vicinity of Test Unit 8.

Artifact Assemblage

The artifact assemblage from 23CE229 includes one projectile point, two bifacial blanks, two biface fragments, one flake scraper, two modified flakes, 299 pieces of lithic manufacturing debris, one mano, 51 pieces of unworked stone and one piece of historic metal (Table 8).

The projectile point is a fragment of a corner notched form recovered from a depth of 10 cm in Test Unit 7 (Figure 8k). The point has a basal fracture and is insufficiently complete to type. It is made from a subtriangular Burlington chert preform with a lenticular cross-section. Given its shallow depth it is probably a Woodland form.

Discussion

23CE229 is a large single component Woodland site. The eight test units excavated within the U.S. Army Corps of Engineers slough easement encountered a light to moderate lithic scatter largely confined to the upper 60 cm of the southeastern portion of the site. The Woodland cultural affiliation is based on the Langtry points recovered during the 1976 survey and the recovery of a fragment of a corner notched point. However, the depth of the deposits, which extend to 60 cm below surface in Test Units 5, 6 and 8, could indicate that earlier components may be present.

Roper (1977) suggested that 23CE229 represented a large single component Woodland base camp or village, similar to the Flycatcher or Dryocopus sites at Stockton Lake based on the large size of the site,

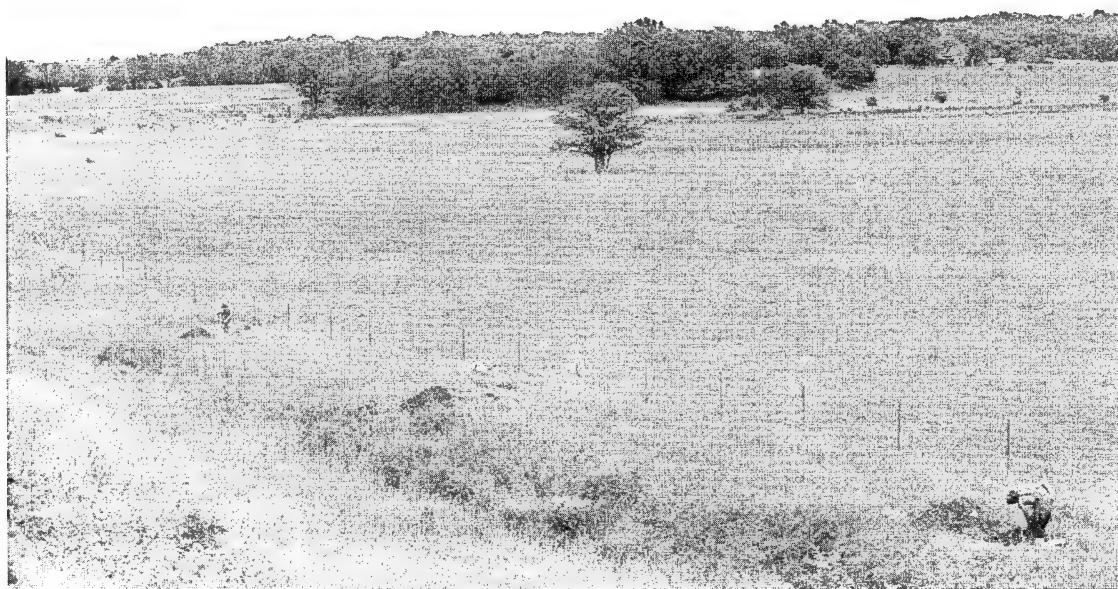
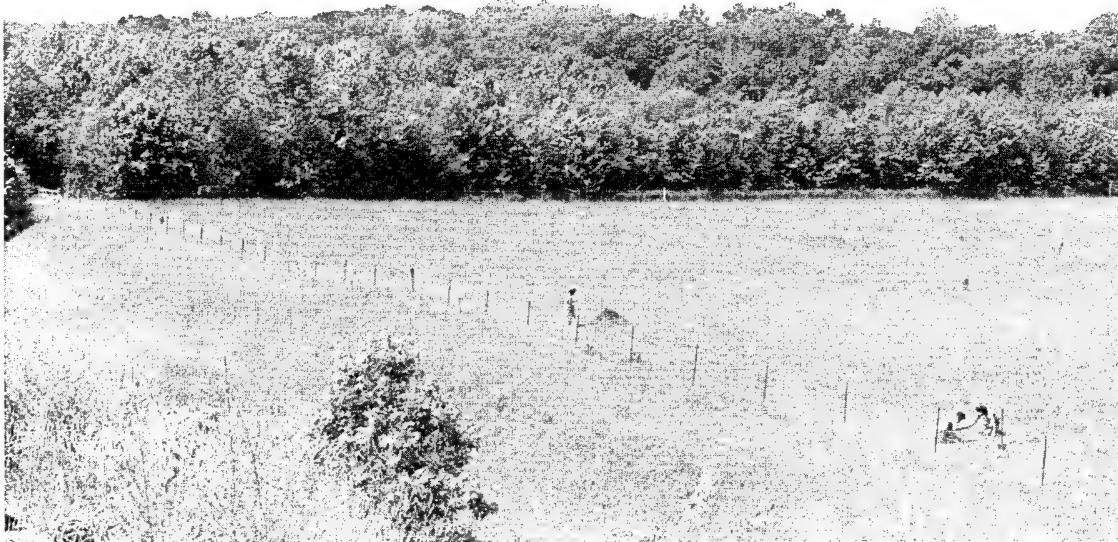


Figure 12. General views of 23CE229 and 23CE230. View to the south of excavations in progress at 23CE229 (upper). View to the north of excavations in progress at 23CE230 (lower).

Table 8. Artifact assemblage from 23CE229.

	TEST UNITS							
	1	3	4	5	6	7	8	TOTAL
CHIPPED STONE TOOLS								
Projectile Point						1		1
Bifacial Blanks						1	1	2
Biface Fragments						1	1	2
Flake Scraper					1			1
Modified Flakes							2	2
Total					1	3	4	8
LITHIC MANUFACTURING DEBRIS								
Cores				1	2			3
Chunks		1	1		1		1	4
Flakes			3	7	7	8	38	63
Chips	1		6	30	7	15	158	217
Shatter			2	1	1		8	12
Total	1	1	12	39	18	23	205	299
GROUND STONE FRAGMENT								
				1			1	2
UNWORKED STONE								
		2		14		5	30	51
METAL								
				1				1
TOTAL	1	3	12	55	19	31	240	361

its position on the low terrace adjacent to the Sac River, the apparent density of artifacts recovered from the surface and the wide range of tools recovered. Only a small portion of the site was investigated in 1986. Poor surface visibility prevented an assessment of the artifact density across the surface of the site but test units provide a controlled sample of debris within the slough easement. Overall, this distribution is highly variable with few or no artifacts found at the southern edge of the easement and a dense concentration of material encountered at the northern edge. Over two thirds of all artifacts recovered in 1986 came from the northernmost test unit. This distribution indicates that the most intensively utilized area of the site was located on the low terrace outside of the easement and that specialized activity areas or refuse disposal occurred at the site. Limited evidence of midden staining was observed in the northern three units in the form of a darkened soil horizon.

The tools recovered from 23CE229 include projectile points, blanks, biface fragments, a scraper, modified flakes and ground stone tools. In addition to similar tools, Roper (1977) reported the recovery of notched scrapers, an adze and a number of cores from the site. These tools suggest a wide variety of activities performed including hunting,

butchering, hideworking, tool manufacture, tool maintenance, vegetal processing and woodworking. Features are likely present given the depth of the deposits and quantity of artifacts recovered. Thus the limited data available support Roper's assessment of the site as a base camp, although the depth of the deposit suggests more than one cultural unit may be represented. Further work outside the U.S. Army Corps of Engineers easement would be required to more accurately determine the site type and to ascertain if storage features or house structures which would be expected at a village site are in fact present.

The portion of the site within the government easement contains significant archaeological deposits and is eligible for the National Register. Current land usage is not impacting the site and no further management action is recommended.

23CE230

23CE230 is located on a low terrace north of the Sac River just east of the Highway J bridge (Figure 11). 23CE230 is probably part of 23CE229 that has been separated by Highway J. It was initially recorded by Roper in 1976 and described as a lithic scatter covering an area of about 200 sq m immediately adjacent to the east side of Highway J. At that time the site was in pasture and had poor surface visibility. Materials collected during the 1976 survey included two biface fragments, one edge-modified flake, four cores and 19 pieces of shatter. Although the cultural affiliation and function of the site were not determined, it appeared to represent a small, temporary campsite. Only the western edge of the site is located within the U.S. Army Corps of Engineers slough easement.

Description of the Investigations

The 1986 investigations at 23CE230 included pedestrian survey, mapping and test excavations (Figure 11). The portion of the site within the slough easement is also part of the Highway J right of way. This area was covered with grass and has been disturbed by highway and bridge construction as well as by the burial of a telephone cable.

Seven one m test units and one 30 cm shovel test were excavated along a north-south transect paralleling the slough easement boundary (Figure 11). The test units were excavated to a depth of 80-100 cm below the surface. The upper 15-30 cm of the profile was a mixed gravel and shale fill containing a few flakes. This layer of fill, resulting from the construction of the Highway J bridge, covered a shallowly buried cultural deposit extending to a depth of 50 cm. A few more deeply buried flakes were also encountered at a depth of 70-80 cm in Test Unit 7 and possibly represent an earlier component.

The test excavations encountered a similar soil profile across the site. The upper 30 cm is a fill consisting of a disturbed dark brown silt mixed with gravel and shale which appears to be overburden

resulting from construction of the Highway J bridge. The underlying A-B horizon consisting of dark brown silt loam extends from a depth of 30-80 cm. This A-B horizon grades into a dark yellowish brown silty clay loam B horizon which extends from 80 to 90 cm+ below surface. Cultural materials were recovered from the disturbed fill and from the A-B and upper B soil horizons.

Artifact Assemblage

The artifact assemblage recovered from 23CE230 includes one bifacial blank, one biface fragment, 59 pieces of lithic manufacturing debris, one ground stone fragment, 15 pieces of unworked stone and one piece of historic metal (Table 9). No diagnostic artifacts were recovered and the cultural affiliation of the site remains unknown.

Table 9. Artifact assemblage from 23CE230.

	TEST UNITS							
	1	2	3	4	5	6	7	TOTAL
CHIPPED STONE TOOLS								
Bifacial Blank			1					1
Biface Fragment	1							1
Total	1		1					2
LITHIC MANUFACTURING DEBRIS								
Chunks	1	1				1		3
Flakes	3		3	1		2	3	12
Chips	4	6	14	3	1	2	11	41
Shatter			2			1		3
Total	8	7	19	4	1	6	14	59
GROUND STONE FRAGMENT								
		1						1
METAL								
						1		1
UNWORKED STONE								
	4	8	1			1	1	15
TOTAL	13	16	21	4	1	8	15	78

Discussion

The 1986 investigations indicate that 23CE230 consists of a large light density lithic scatter extending over a low terrace of the Sac River. The site is approximately 200 m in length and is estimated to extend for a distance of 100 m east of the U.S. Army Corps of Engineers slough easement. Cultural debris is restricted primarily to the upper 50 cm of the alluvial deposits although a few artifacts recovered from

70-80 cm below surface may indicate the presence of a second more deeply buried component. No temporally diagnostic artifacts were found at 23CE230, however the site is only separated from 23CE239 by Highway J. It is probable that 23CE230 is a portion of 23CE229 and this relationship would indicate a tentative Late Woodland cultural affiliation for the site.

Roper (1977) suggests that 23CE230 represents a limited use extractive camp. However, as noted above, the site may be a portion of 23CE229, identified as a Late Woodland base camp or village. The artifacts recovered, artifact density and depth of deposits encountered are similar at both sites. These factors along with the close proximity of the sites tend to support the identification of 23CE230 as a portion of 23CE229. This identification remains tentative and further investigations in the portion of 23CE230 outside the slough easement would be required before the relationship of these sites can be determined.

The portion of the site within the U.S. Army Corps of Engineers slough easement has been disturbed by bridge construction as well as by the burial of a telephone cable and contains only thin poorly preserved deposits. On this basis, this part of the site is not eligible for the National Register. However, further testing of the portion of the site located outside of the government easement would be required before the National Register status of the site can be determined. In any event, no further archaeological work is recommended for the portion of 23CE230 located within the slough easement.

23CE238

This site is located on a prominent terrace adjacent to a meander of the Sac River approximately 240 m northwest of Montgomery Lake and 400 m southwest of the confluence of Alder Branch with the Sac River (Figure 13). The site was recorded by Roper during the 1976 Downstream Stockton Study and was described as a lithic scatter covering a 4200 sq m area in a cultivated field on the floodplain of the Sac River. A total of 112 artifacts were recovered from the surface in 1976 including ten tools and 102 pieces of debitage. No temporally diagnostic artifacts were found and the site function and cultural affiliation could not be determined based on the survey data.

Description of the Investigations

The site was relocated during the 1986 survey and found to consist of a dense scatter of chipped stone tools, debitage and burnt rock located on a terrace delineated by the 780 ft contour just south of the Sac River. The field had been recently planted in beans and had a visibility of 100 percent. Surface debris extended over an area approximately 200 m in length by 60 m in width. One medium-sized corner notched dart point, one contracting stemmed Langtry point and one

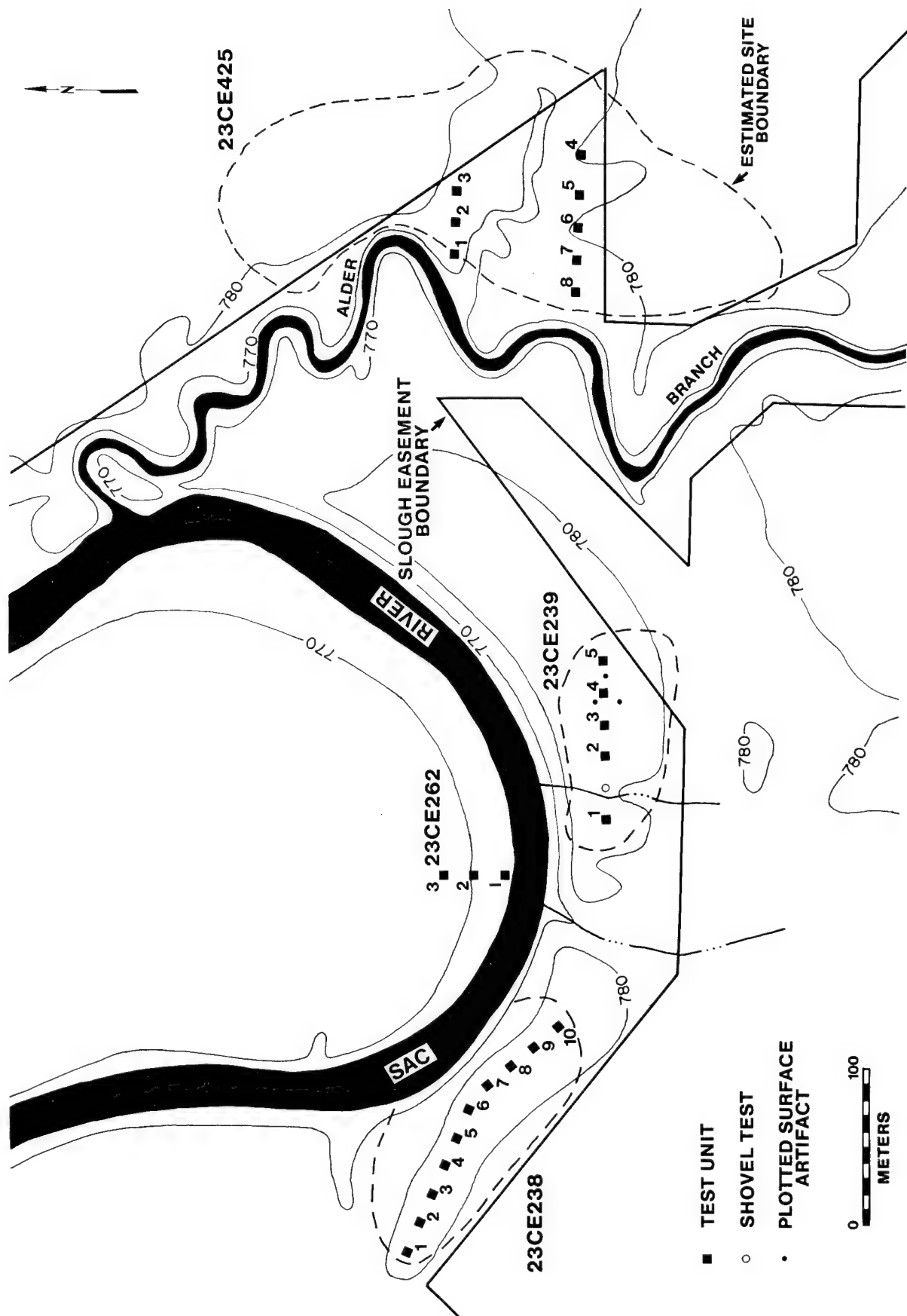


Figure 13. Location and plan view of test excavations at 23CE238, 23CE239, 23CE262, and 23CE425.

grit tempered body sherd were recovered from the surface. These artifacts indicate a Late Woodland cultural affiliation for the site. The site is located entirely within the U.S. Army Corps of Engineers slough easement.

Test excavations were conducted at the site in August of 1986 (Figure 14). At this time the field was in waist high soy beans with a reduced visibility of 20 to 30 percent. The investigations consisted of additional survey, mapping and test excavations. The test excavations consisted of a transect of ten test units excavated at 20 m intervals situated so as to bisect the highest terrain through the center of the site (Figure 13). The one m test units were excavated to depths of 80 cm below surface.

The soil profile exposed by the test excavations across the site was uniform except for the depth of the A horizon which extended to a depth of 10 cm in Test Unit 2 and to a depth of 40 cm in Test Units 6 through 10. The upper part of the A horizon was an Ap horizon consisting of a dark yellowish brown silt loam extending to a depth of 10-20 cm below surface. The underlying B horizon was a dark yellowish brown silty clay which extended from the base of the A horizon to 80 cm+ below surface. Artifacts were recovered from the disturbed Ap horizon in all of the test units. Intact cultural deposits were recovered from the A-B and upper B horizons in Units 2 through 10.

The distribution of cultural debris in the test units indicates that two components are present at 23CE238. The upper component was aerially extensive and was encountered in all of the units excavated, but was most concentrated in the western area of the site. High densities of artifacts were recovered primarily from the upper 20 cm of Test Units 2 through 4. Temporally diagnostic artifacts include two grit tempered body sherds and three projectile points recovered from Test Unit 2 and two projectile points recovered from Test Unit 4. The projectile points include one Gary, one Langtry, one Steuben-like form along with two Scallorn arrow points indicating a Late Woodland cultural affiliation for the upper component.

The lower component at 23CE238 is located in the central and eastern part of the site and consists of a concentrated area of debris located from a depth of 20-50 cm in Test Units 5-10. One projectile point recovered from 45 cm below surface in Test Unit 6 is a corner notched form similar to the Smith Basal Notched type indicating a Late Archaic cultural affiliation for the lower component at 23CE238. The cultural material associated with the Late Archaic component is most concentrated in the vicinity of Test Units 5 and 6. Based on the artifact densities encountered during the investigation the Late Archaic occupation at 23CE238 does not appear to represent as extensive an occupation as the later Late Woodland occupation.

Artifact Assemblage

The artifact assemblage from 23CE238 includes three body sherds, eight projectile points, two bifacial preforms, three bifacial blanks,



Figure 14. General views of 23CE238 and 23CE239. View to the south of excavations in progress at 23CE238 (upper). View to the east of excavations in progress at 23CE239 (lower).

seven biface fragments, one bifacial scraper, three unifacial scrapers, six modified flakes, six ground stone tools, 187 pieces of lithic manufacturing debris and 180 pieces of unworked stone (Table 10).

The single small body sherd recovered from the surface is grit tempered, has a smoothed surface with an exterior red slip and exhibits a shallow incised line. Two additional small body sherds recovered from the upper 20 cm of Test Unit 2 are also smoothed surfaced grit tempered sherds.

The eight projectile points recovered include two from the surface, three from Test Unit 2, two from Test Unit 4 and one from Test Unit 6. The two points from the surface were from the western side of the site

Table 10. Artifact assemblage from 23CE238.

	SURFACE	1	2	3	4	TEST		UNITS		9	10	TOTAL
						5	6	7	8			
CERAMICS												
Body sherds	1		2									3
Total	1		2									3
CHIPPED STONE TOOLS												
Projectile Points	2		3		2		1					8
Bifacial Preforms	2											2
Bifacial Blanks	2						1					3
Biface Fragments	5		1	1								7
Bifacial Scraper	1											1
Unifacial Scrapers	2			1								3
Modified Flakes	1		3	1			1					6
Total	15		7	3	2		3					30
LITHIC MANUFACTURING DEBRIS												
Cores					1							1
Chunks			5		1	3		1	2			12
Flakes	2	1	9	4	7	17	13	9	6	11	7	86
Chips			14	12	2	14	12	10		4	14	82
Shatter			3	1		1	1					6
Total	2	1	31	17	11	35	26	20	8	15	21	187
GROUND STONE TOOLS												
Ground Stone Fragments	2						3					5
Mano						1						1
Total	2					1	3					6
UNWORKED STONE		3	18	14	17	33	48	11	4	29	3	180
TOTAL	20	4	58	34	30	69	80	31	12	44	24	406

and include a proximal section of a medium-sized contracting stemmed Langtry dart point with a straight base made from Jefferson City chert (Figure 8l). The second specimen is a medium-sized corner notched point with an expanding stem and straight base which is similar to the Kings Corner Notched type (Figure 8m). This point has a triangular serrated blade which has been resharpened and was made from banded gray and white chert which appears to be heated. Both surface points are types associated with the Late Woodland period. The three points from Test Unit 2 are from the upper 20 cm and include two larger forms and a smaller arrow point. One of the larger forms is the proximal section of a contracting stemmed Gary point made from Burlington chert (Figure 8n) which is similar to the type referred to by Chapman (1980:313) as Table Rock Pointed Stemmed. This type, while similar to the Gary type, has a narrower stem and a pointed base. They are associated with the Late Woodland and Mississippian periods in southwest Missouri. The second is a side notched form with a convex base similar to the Stueben type (Figure 8o). This latter point is made from a local banded gray fossiliferous chert. The arrow point is a unifacially worked corner notched form made from Burlington chert (Figure 8p). The base of the point is missing but it appears to be similar to the Scallorn type. A distal segment of a Scallorn arrow point (Figure 8q) and a contracting stemmed Langtry point (Figure 8r) were also recovered from the upper 10 cm of Test Unit 4. A proximal section of a basally notched dart point similar to the Smith Basal Notched type (Figure 8s) was also recovered from a depth of 45 cm in Test Unit 6 indicating that the lower cultural deposits between 30 and 50 cm below surface date to the Late Archaic period.

Discussion

23CE238 is a multicomponent site located on a low terrace southwest of the Sac River. The upper component consists of a large concentrated lithic scatter extending over a 5000 sq m area. Surface debris is most concentrated on the western part of the site in the vicinity of Test Units 2, 3 and 4. Diagnostic artifacts, including smoothed surfaced grit tempered ceramics, contracting stemmed Langtry and a Gary-like Table Rock Pointed Stem point, a Stueben point and Scallorn-like arrow points indicate that the upper component dates to the Late Woodland period.

The second lower component was located from 30 to 50 cm below surface in Test Units 5 through 10. A broad basal notched point from this deposit resembles both the Smith and Etley types indicating that this component dates to the Late Archaic period. The Late Archaic component does not appear to be quite as intensive an occupation as the upper Late Woodland component, although the variety of tools and debris does indicate that it was a fairly substantial occupation. The size of the site, density of debris, variety of artifacts present and limited quantity of ceramics suggest that the Woodland component is a base camp occupied as a small hamlet rather than a large village.

23CE238 is situated on a low terrace overlooking the Sac River and covers an area of over 5000 sq m. The presence of a darkened upper soil

horizon indicates that midden staining has occurred especially within the areas of highest artifact concentration. Although subsurface features were not located within the test units, the large quantity of unworked stone recovered indicates that cooking features or hearths are present at the site. Specialized refuse disposal may be indicated by the larger accumulation of debris encountered in the eastern portion of the site. The tool assemblage indicates that a wide variety of activities were performed including hunting, butchering, hide processing, gatherings, tool manufacture, tool maintenance and vegetal food processing. Overall 23CE238 appears to represent an intensive, perhaps multiseasonal, occupation such as inferred for a base camp. However, the site probably represents a small hamlet, rather than a large village such as 23CE229.

23CE238 has the potential to yield important information on Late Archaic and Late Woodland chronology and adaptive patterns in the Stockton Lake area. Roper has subdivided the Woodland period into early and late stages based on the distribution of dart points at certain sites and arrow points at others. Perttula and Purrington (1983) have suggested that Roper's temporal stages are not fully warranted due to the co-occurrence of Woodland period dart points and arrow points at some sites. The presence of both arrow points and dart points at a Late Woodland base camp or hamlet indicates that this site could provide data on whether the distribution of dart points and arrow points at Woodland sites is the result of temporal or functional differences between these sites. 23CE238 is also one of the few sites in the project area which has produced ceramics. The presence of ceramics indicates that the site could provide data on whether the Late Woodland sites in the Sac River valley are associated with the Ozark Highland Lindley phase, the closely related Merimac Springs phase or the Pomona focus. The significance of 23CE238 is further enhanced by the presence of an undisturbed Late Archaic component. Late Archaic settlement patterns are poorly understood in the area and this site could contribute greatly to an understanding of this period.

23CE238 is recommended to be eligible for the National Register of Historic Places based on its potential to yield significant information relevant to research problems associated with both Late Archaic and Late Woodland cultural chronology and settlement-subsistence patterns. The site is currently being impacted by agricultural production and by erosion from the Sac River. The cutbank is actively encroaching on the south side of the site and erosion as a result of power generation releases has occurred. It is recommended that data recovery excavations be undertaken at 23CE238. The meander adjacent to the site should be periodically checked to monitor the rate of erosion to the site.

23CE239

23CE239 is located on a terrace just south of a meander of the Sac River approximately 300 m downstream from the confluence of Alder Branch

and the Sac River. The site is situated approximately 60 m east of 23CE238 and is separated from it by an intermittent stream which drains Montgomery Lake. The site was located by Roper in 1976 and described as lithic scatter covering about 240 sq m. No diagnostic artifacts were recovered in 1976 although over 100 pieces of debitage were collected. The cultural affiliation and function of the site were not determined on the basis of the survey data.

Description of the Investigations

The 1986 investigations at 23CE239 included pedestrian survey, mapping, and test excavations (Figure 13). The site was in a freshly plowed field which afforded excellent visibility. The site was found to be larger than initially reported and consisted of a light to moderate scatter of lithic debris covering just over 2 acres. Almost all of the site is located in the U.S. Army Corps of Engineers slough easement. A transect of five one m test units and one shovel test was excavated across the site (Figure 13). The test units were excavated to depths of 80 to 100 cm. Artifacts were restricted to the upper 30 cm except for Test Units 2 and 3 where cultural material extended to depths of 50 and 70 cm, respectively. No artifacts were found eroding from the cutbank of the Sac River at the northern edge of the site.

Test excavations at 23CE239 encountered a similar soil profile across the site which closely resembled the profile at 23CE238. The upper Ap horizon was a dark brown silt which extended from the surface to a depth of 10 to 20 cm. An underlying A-B horizon consisting of a dark brown to dark yellowish brown silt loam extends from 10-20 cm to a depth of 40 cm where it graded into a dark yellowish brown silty clay loam B horizon. Cultural materials were found in the disturbed Ap horizon in all of the units. Undisturbed cultural deposits were recovered from the A-B and upper B horizons in Test Units 2, 3, and 4.

Artifact Assemblage

The artifact assemblage from 23CE239 includes three projectile points, 41 pieces of lithic manufacturing debris and 50 pieces of unworked stone (Table 11). Two fragmentary projectile points from the surface include a proximal section of a small side notched dart point with a basal fracture made from Jefferson City chert (Figure 15a). The second is a small corner notched point with an expanding stem and a slightly convex base made from an ovate heated Burlington chert preform. Neither of these conform to well defined types. A more deeply buried point was recovered from a depth of 65 cm in Test Unit 3. It is a corner notched form with an expanding stem and straight base (Figure 15b). This point was made from a triangular Jefferson City chert preform and is similar to Late Archaic points from the Little Green Heron site indicating a date of about 3000 years B.P. (Parisi 1985).

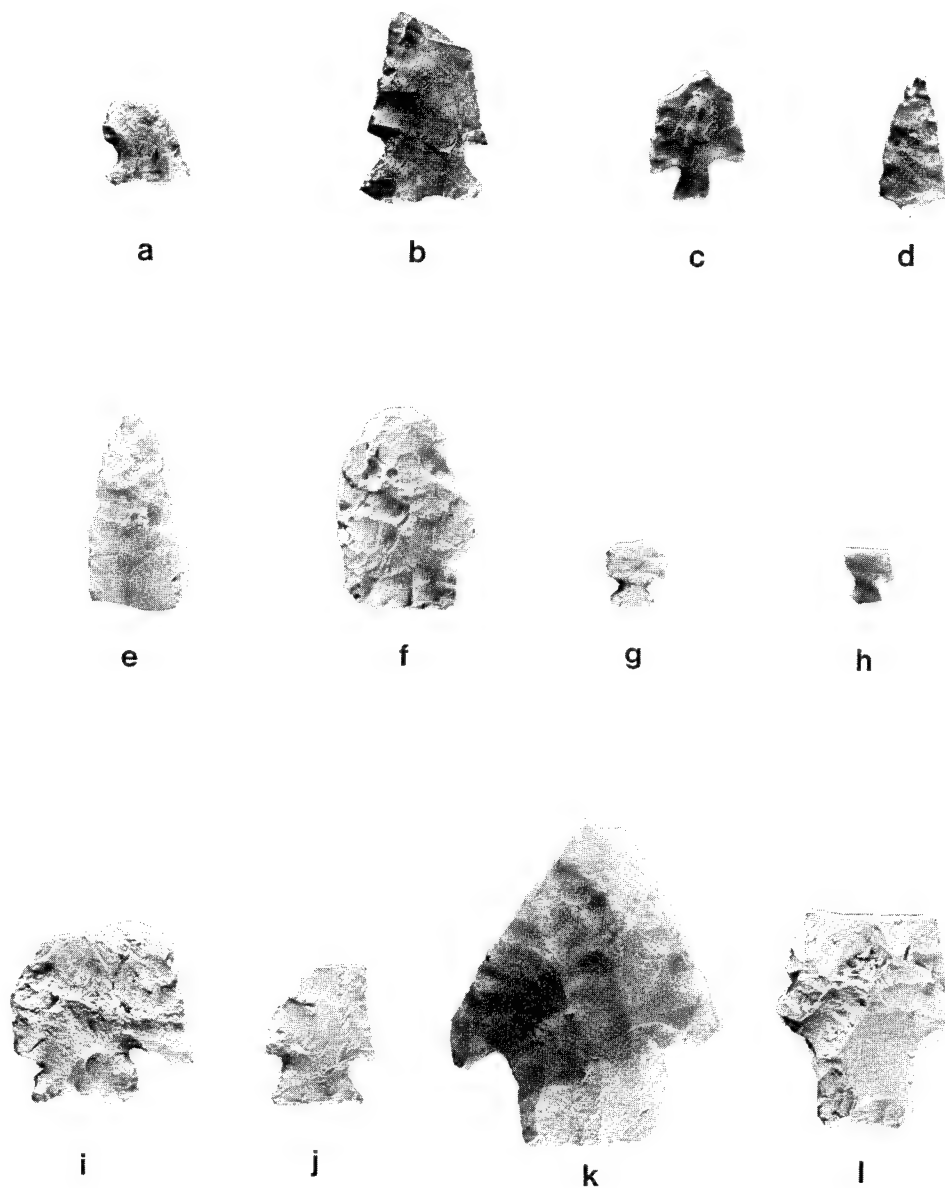


Figure 15. Projectile points recovered from 23CE239, 23CE242, 23CE253, 23CE263 and 23CE409: a-b, 23CE239; c-e, 23CE242; f, 23CE253; g, 23CE263; h-l, 23CE409.

Table 11. Artifact assemblage from 23CE239.

		TEST UNITS					
	SURFACE	1	2	3	4	5	TOTAL
CHIPPED STONE TOOLS							
Projectile Points	2			1			3
LITHIC MANUFACTURING DEBRIS							
Chunks			1	1			2
Flakes		1	3	4	4		12
Chips		1	7	2	13		23
Shatter			3	1			4
Total		2	14	8	17		41
UNWORKED STONE			7	21	16	6	50
TOTAL	2	2	21	30	33	6	94

Discussion

23CE239 is a light lithic scatter extending over a 5000 sq m area of a low terrace just south of the Sac River. Cultural materials are restricted to the upper 30 cm of the alluvial deposits except in the vicinity of Units 2 and 3 where artifacts were recovered to depths of 50 and 70 cm below surface. The cultural affiliation of the upper component cannot be determined from the data recovered. The proximity of this site to 23CE238, which is located just west of 23CE239, indicates that the upper component is probably a Late Woodland component. It may represent activity areas associated with the substantial occupation at 23CE238. The recovery of a medium-sized corner notched dart point indicates that the lower component dates to the Late Archaic period. The lower component may also be associated with the Late Archaic occupation at 23CE238.

In summary, 23CE239 consists of a light density stratified site with probable Late Woodland and Late Archaic components present. The low amount of cultural material, few tools and predominance of manufacturing debris indicates the site functioned as a limited use extractive camp. It may constitute limited activity areas associated with 23CE238. The upper component has been heavily impacted by cultivation and is poorly preserved. The Late Archaic occupation consists of a small thin lithic scatter. The site contains minimally preserved deposits within a restricted area and is not considered to be eligible for the National Register of Historic Places. No further work is recommended for 23CE239.

23CE242

23CE242 is located on a low terrace in Horseshoe Bend, a meander loop of the Sac River, approximately 1 km southeast of the Caplinger Mills dam (Figure 6). The site is situated 100 m west of 23CE52 and was recorded by Roper in 1976 and described as a lithic scatter on a low terrace of the Sac River. At that time it was in a cultivated field and was estimated to cover an area of approximately 1400 sq m within the slough easement. Four projectile points, one biface fragment, five edge-modified flakes and 76 pieces of debitage were recovered during the 1976 investigations. The four points include one Big Sandy Notched, one Afton Corner Notched, one Langtry and one unidentified corner notched variety which, according to Roper (1977), indicate occupations during the Middle Archaic, Late Archaic and early portion of the Woodland periods. The low density and restricted ranges of artifacts suggested that the site was not intensively utilized and possibly served as a temporary extractive camp that was repeatedly occupied.

Description of the Investigations

The 1986 investigations at 23CE242 included pedestrian survey, mapping, and test excavations (Figure 16). A moderate scatter of lithic debris was observed covering nearly 3200 sq m along a low terrace remnant covered with low beans and wheat. Over half of the site area was located in the U.S. Army Corps of Engineers slough easement. A north to south transect of one m test units were placed at 20 m intervals along the easement boundary (Figure 6). Artifacts were restricted to the upper 30 cm in Test Units 1, 2 and 4. Test Unit 5 was sterile and more deeply buried cultural material was located to a depth of 60 cm in Test Unit 3.

A similar soil profile was encountered across 23CE242. The upper Ap horizon consisted of a brown silt loam extending to a depth of 25 cm where it graded into an A2 horizon consisting of brown silt loam which extended to a depth of 40 cm. The underlying B horizon consists of a dark brown silty clay loam which extends from a depth of 40 to 90 cm+. Lithic debris was recovered from the disturbed Ap horizon and undisturbed cultural deposits were encountered in the lower A2 horizon and upper B horizon in Test Units 1 through 4.

Cultural Feature

A feature consisting of a stain containing burnt soil and charcoal intermixed with burnt rock and debitage was encountered in the northeast corner of Test Unit 3 and was designated as Feature 1. The exposed portion of Feature 1 was 40 cm in length and 20 cm in width and extended from 45 to 55 cm below surface. The feature is probably a small hearth.



Figure 16. General views of 23CE242 and 23CE245. View to the northwest of excavations in progress at 23CE242 (upper). View to the south of survey in progress at 23CE245 (lower).

Radiocarbon Date

A sample of wood charcoal recovered from Feature 1 was submitted to Beta Analytic for radiocarbon dating. This sample yielded a date of 1150±60 years B.P. indicating a Late Woodland temporal placement for 23CE242.

Artifact Assemblage

The artifact assemblage from 23CE242 includes two projectile points, one preform, one bifacial blank, one biface fragment, one bifacial scraper, one modified flake, 27 pieces of lithic manufacturing debris, five ground stone fragments and 15 pieces of unworked stone (Table 12). The two projectile points recovered from the surface are similar to the small corner notched Scallorn type which date to the Late Woodland period (Figure 15c-d). The preform is a small subtriangular biface with a lenticular cross section (Figure 15e).

Table 12. Artifact assemblage from 23CE242.

		TEST UNITS				
	SURFACE	1	2	3	4	TOTAL
CHIPPED STONE TOOLS						
Projectile Points	2					2
Bifacial Preform		1				1
Bifacial Blank	1					1
Biface Fragment				1		1
Bifacial Scraper				1		1
Modified Flake			1			1
Total	3	1	1	2		7
LITHIC MANUFACTURING DEBRIS						
Chunk		1				1
Flakes		4		4	1	9
Chips		6	5	3	1	15
Shatter		2				2
Total		13	5	7	2	27
GROUND STONE FRAGMENTS	1		2	2		5
UNWORKED STONE			1	14		15
TOTAL	4	14	9	25	2	54

Discussion

23CE242 is a moderate lithic scatter located on a low terrace remnant in the Horseshoe Bend meander loop of the Sac River. Although the site was originally reported to contain multiple Archaic and

Woodland occupations, no evidence of multiple stratified deposits was encountered within the test units. Rather the site appears to consist of a single component which probably dates to the Late Woodland period. The Middle and Late Archaic point types reported by Roper (1977) are more likely associated with 23CE52 which is located adjacent to 23CE242. A radiocarbon date of 1150 ± 60 years B.P. was obtained from a hearth located at a depth of between 45-55 cm near the center of the site, confirming a Late Woodland cultural affiliation. The test units encountered a light scatter of debris. The relatively small size, low debris density, lack of midden staining and variety of tools present indicate that the site is a brief, temporary extractive camp as initially reported by Roper (1977).

Although 23CE242 contains a limited area of intact deposits near the center of the site, it is not recommended to be eligible for the National Register of Historic Places. The limited nature and low density of intact debris within the slough easement indicates that the site would provide little additional significant data on the prehistoric occupation of the project area.

23CE245

23CE245 is located on a low terrace approximately 400 m southeast of the Horseshoe Bend meander of the Sac River (Figure 17). It was recorded by Roper in 1976 and described as a lithic scatter covering about 300 sq m in a wheat field on the Sac River floodplain. Most of the site is located within the U.S. Army Corps of Engineers slough easement. Artifacts recovered from the 1976 investigations include five projectile points, one bifacial blank, one biface fragment, eight modified flakes and 73 pieces of debitage. The points include three Scallorn points, one Cahokia Notched point and one triangular unnotched point. Roper (1977:14) assigned 23CE245 to the late stage of the Woodland period and suggested that it was a small limited activity site.

Description of the Investigations

The 1986 investigations at 23CE245 included pedestrian survey, mapping and test excavations (Figure 17). The site was planted in corn and consisted of a very light scatter of lithic debris. Four one m test units were excavated to a depth of 80 cm at 20 m intervals across the site. Only nine artifacts were recovered during the 1986 investigations including one modified chunk, three pieces of debitage, one ground stone fragment and four pieces of unworked stone. Test Unit 2 contained two pieces of unworked stone in the plow zone and Test Unit 3 contained one ground stone fragment in the upper 10 cm, while Test Units 1 and 4 were completely sterile.

Similar soil profiles were encountered in Test Units 1 and 2 consisting of an upper Ap horizon which extended to a depth of 20 cm. An underlying A2 or A-B horizon consisting of a very dark grayish brown silt loam extends from a depth of 20 to 80 cm+ below surface. The sediments in Test Units 3 and 4 consisted of laminated silts and sand

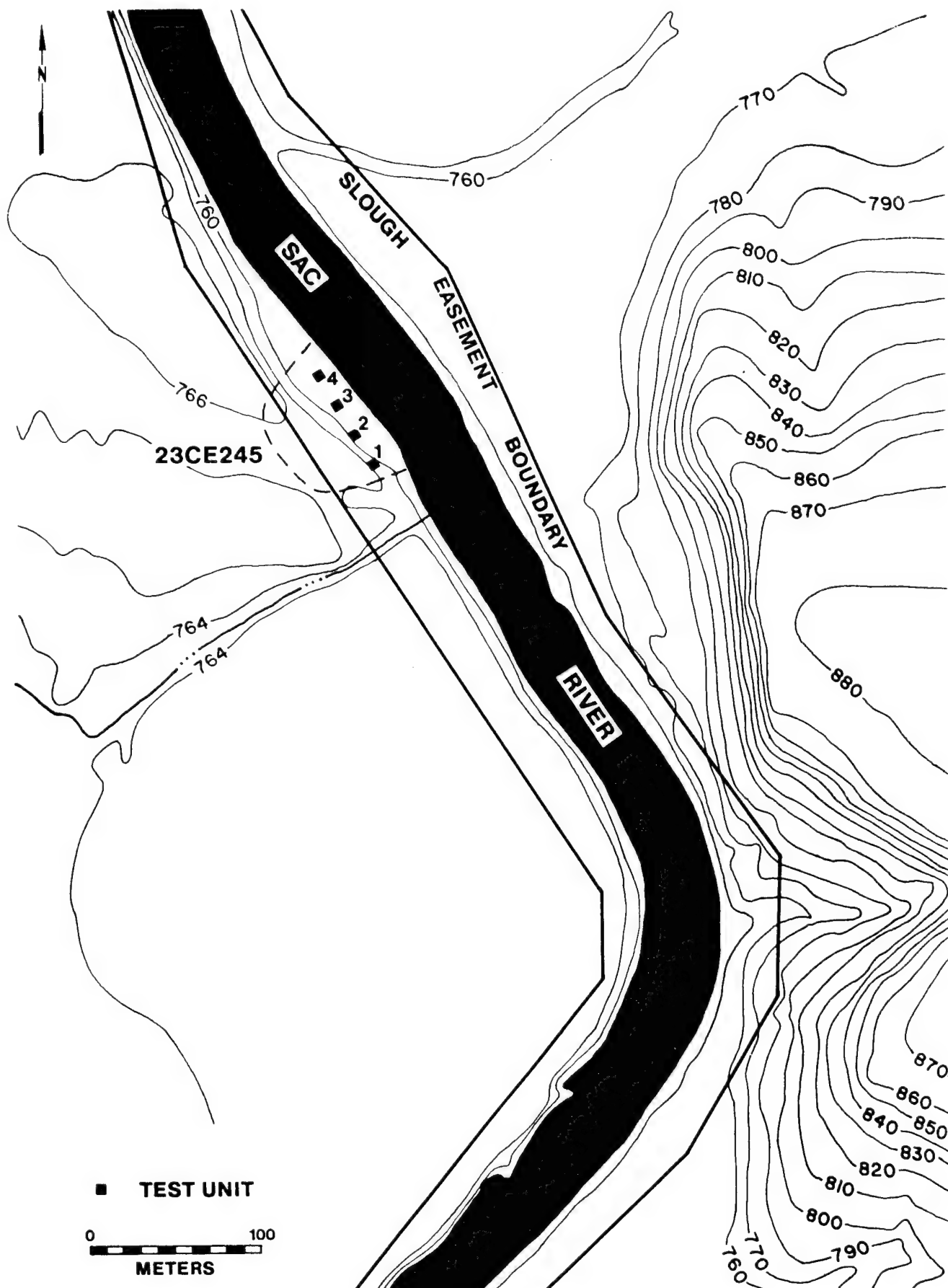


Figure 17. Location and plan view of test excavations at 23CE245.

extending from the surface to a depth of 80 cm+. These two test units are down slope and nearer to the Sac River and probably represent recent alluvial deposits.

Discussion

23CE245 consists of a light lithic scatter extending over a 400 sq m area on a low terrace of the Sac River. Only nine artifacts were recovered during the 1986 investigations. None of these are temporally diagnostic and all were recovered from the cultivation zone. Based on the five arrow points recovered during the 1976 survey, Roper (1977) interpreted 23CE245 as a Late Woodland limited activity or extractive camp site. The predominance of arrow points suggests the site served as a hunting camp. This interpretation is supported by the small size of the site, very light artifact density and limited tool inventory recovered in 1986. The portion of the site within the U.S. Army Corps of Engineers slough easement has been plowed out and the site is not eligible for the National Register of Historic Places. No further archaeological work is recommended.

23CE253

23CE253 is a large multicomponent site located on a terrace of the Sac River just south of its confluence with Silver Creek (Figure 18). The site was initially recorded by Roper in 1976 and described as a scatter of prehistoric and historic debris covering about 80 ac along the floodplain and terrace of the river. Only the northern and western edges of the site are located within the U.S. Army Corps of Engineers slough easement. Prehistoric artifacts recovered from the surface during the 1976 investigations include 13 projectile points, one scraper, six bifacial blanks, one adze, 49 biface fragments, two unifacial scrapers, 30 edge-modified flakes, 26 cores, 276 pieces of debitage and one mano. The points include two Big Sandy Side Notched, one Smith Basal Notched, one Afton Corner Notched, one possible Etley, one "lobed" form, one Scallorn, one lanceolate, three large corner notched and two unidentifiable specimens (Roper 1977:57). Based on this range of styles Roper inferred the presence of components dating to the Middle Archaic, Late Archaic and later portion of the Woodland periods. Based on the large quantity and variety of material present she suggested that the site was a base camp. Historic debris recovered from the site included bottle glass, pressed glass, stoneware, whiteware, porcelain and metal indicating the presence of a historic residential occupation dating between 1840 and 1920 (Miller 1977).

Description of the Investigations

The 1986 investigations at 23CE253 were limited to the portion of the site within the slough easement and included pedestrian survey, mapping and test excavations (Figure 18). The area

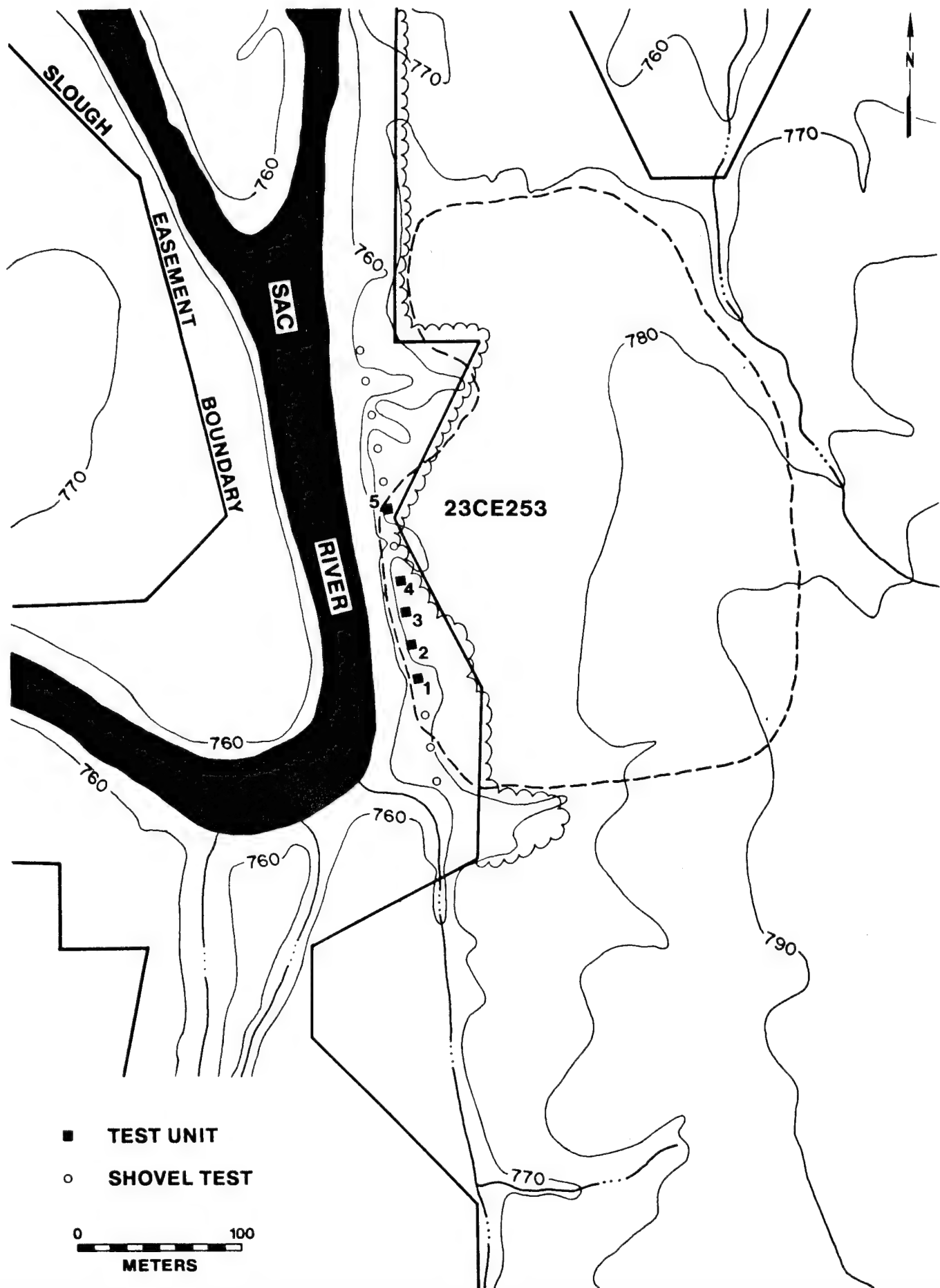


Figure 18. Location and plan view of test excavations at 23CE253.

of the site within the easement was covered with riparian woodland while the portion outside of the easement was planted in wheat. An historic farmstead consisting of foundation remains was located outside the government easement and a small amount of historic material was observed on the surface of the site. A transect of five one m test units and nine shovel tests was excavated within the easement paralleling the river (Figure 18). Cultural material was confined to the upper 20 cm of Test Units 1 and 2, the upper 40 cm of Test Unit 3 and the upper 30 cm of Test Unit 4. Test Unit 5 and all of the shovel tests were sterile. The soil profile exposed by the test excavations showed an upper A horizon consisting of a dark brown silt loam which extended to a depth of 10 cm. An underlying A2 horizon consisting of a yellowish brown silt loam extends from 10 cm to a depth of 30 cm. The transition from the A2 to the B horizon was gradational and occurred from 30-35 cm. The underlying B horizon was a brown with gray mottles silty clay loam which extended to a depth of 80 cm+. Cultural materials were recovered from the A and A2 horizons in Test Units 1 through 4 and in the A-B transition and upper B horizon in Test Units 3 and 4.

Artifact Assemblage

The artifact assemblage from 23CE253 includes one projectile point, one bifacial blank, one biface fragment, 67 pieces of lithic manufacturing debris and 65 pieces of unworked stone (Table 13). The projectile point was recovered from a depth of 10 cm in Test Unit 1 and is a stemmed form resembling the Stone Square Stemmed type indicating a Late Archaic affiliation for the area of the site within the slough easement (Figure 15f).

Table 13. Artifact assemblage from 23CE253.

	TEST UNITS				TOTAL
	1	2	3	4	
CHIPPED STONE TOOLS					
Projectile Point	1				1
Bifacial Blank			1		1
Biface Fragment			1		1
Total	1		2		3
LITHIC MANUFACTURING DEBRIS					
Cores			5		5
Chunks		5	7		12
Flakes	13	11		4	28
Chips		4	9	6	19
Shatter		2	1		3
Total		24	33	10	67
UNWORKED STONE			65		65
TOTAL	1	24	100	10	135

Discussion

Based on the strategic location of 23CE253, its large size, high surface density and wide range of tools recovered from the surface, Roper (1977) suggested the site was a multicomponent base camp occupied during the Middle Archaic, Late Archaic and Woodland periods. On the basis of the small portion of the site that occurs within the U.S. Army Corps of Engineers slough easement, the site type and function can only be partially assessed. Within the easement overall artifact density was very low. Only 135 artifacts were recovered from the five units excavated, 100 of which came from Test Unit 3. Only three chipped stone tools in addition to one Late Archaic point was recovered. It appears that the portion of the site within the slough easement represents a specialized activity area or a limited use Late Archaic extractive camp.

Because of the thin distribution and shallow depth of cultural materials, the portion of 23CE253 in the U.S. Army Corps of Engineers slough easement is not recommended to be eligible for the National Register. Further testing of the portions of the site outside of the government easement would be required to firmly determine the National Register status of the site.

23CE258

23CE258 is located on a prominent terrace between the base of the east valley wall and the Sac River, approximately 2.5 km east of the Highway J bridge (Figure 19). The site was recorded by Roper in 1976 and described as a large multicomponent Late Archaic and Woodland occupation covering a 120 ac area. Most of the site lies outside of the U.S. Army Corps of Engineers slough easement. Artifacts recovered during the 1976 investigations included one Cupp and two Scallorn points indicating the presence of a Woodland component.

Description of the Investigations

The 1986 investigations at 23CE258 included pedestrian survey, mapping and test excavations (Figure 19). The site was covered with dense grass and visibility was very poor. A transect of 12 one m test units and 15 shovel tests was excavated at 20 m intervals to a depth of 80 cm in the easement (Figure 19). Except for Test Units 1, 2 and 3 which produced cultural material consisting mainly of lithic manufacturing debris and unworked stone within the upper 30 cm and one shovel test, the test units and shovel tests were culturally sterile.

The excavations at 23CE258 encountered two different soil profiles which correlate with differences in terrace elevation. Test Units 1 and 2 are located near the southern edge of a prominent terrace which appears to be the T-1 terrace of the Sac River. The soil profile in these units contains a very dark grayish brown silty clay loam Ap horizon which extends from the surface to a depth of 20 cm. This was underlain by a transitional A-B horizon consisting of a dark brown silt

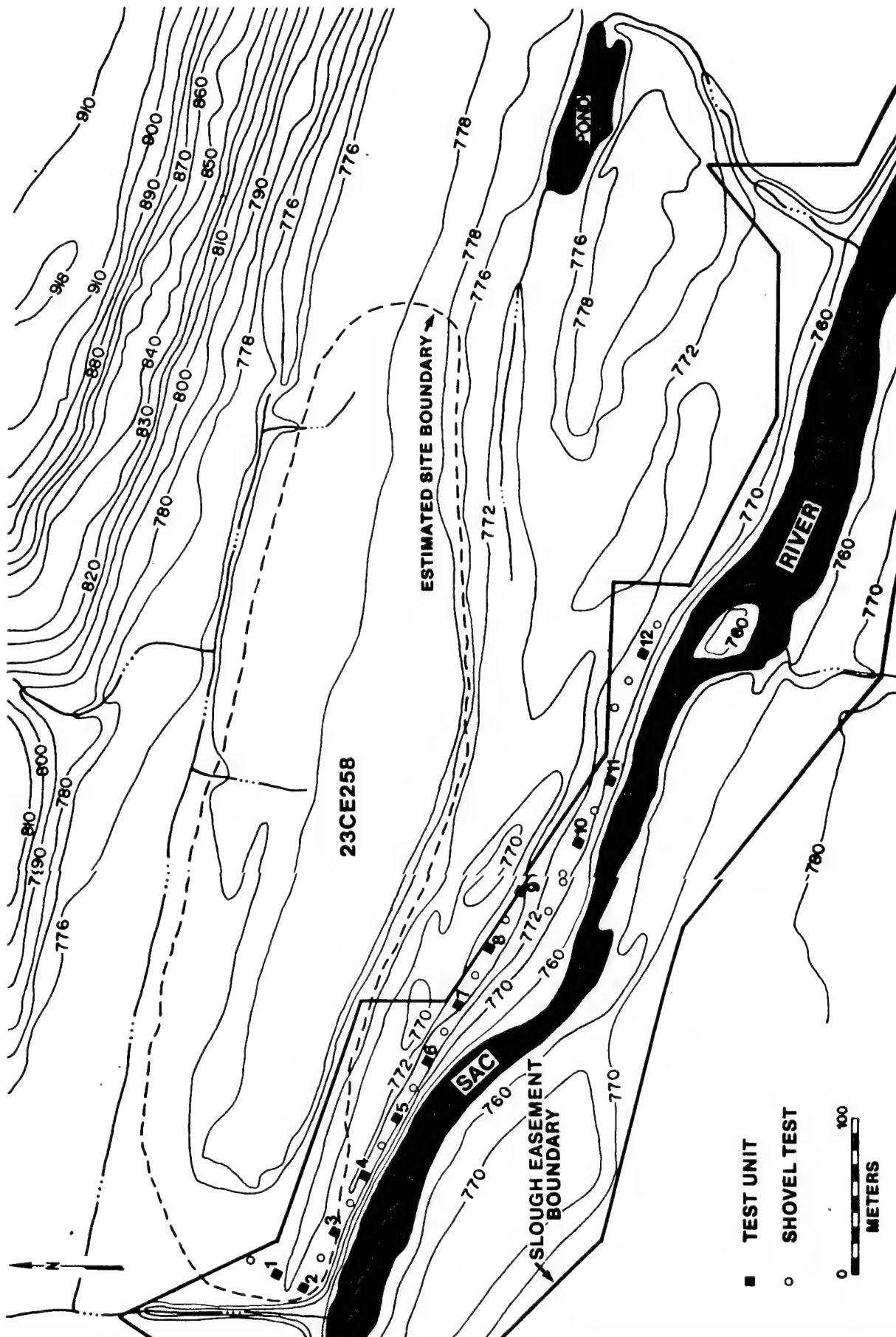


Figure 19. Location and plan view of test excavations at 23CE258.

loam which extends from 20 cm to a depth of 60 cm. The underlying B horizon consists of a dark yellowish brown silty clay loam which extends from 60 cm to a depth of 90 cm+.

Test Units 3 through 12 are located on the lower T-0 terrace. The upper 30 cm of the soil profile encountered in these units consists of a dark brown silt loam which appears to be an accumulation of slope wash from the higher T-1 terrace. An underlying buried A horizon consisted of very dark grayish brown silt loam which extended from 30 to 75 cm below surface. The lower B horizon consists of dark brown silty clay loam which extends from 75 to 90 cm+ below surface. Cultural materials were recovered from the Ap and upper A-B horizons in Test Units 1, 2 and 3. Units 4 through 12 were culturally sterile.

Artifact Assemblage

The artifact assemblage recovered from 23CE258 includes one biface fragment, seven modified flakes, 70 pieces of lithic manufacturing debris, ten pieces of unworked stone and one piece of historic metal (Table 14). No diagnostic artifacts were recovered from the cultural

Table 14. Artifact assemblage from 23CE258.

		TEST UNITS			
	SHOVEL TEST	1	2	3	TOTAL
CHIPPED STONE TOOLS					
	Biface Fragment	1			1
	Modified Flakes	6	1		7
	Total	7	1		8
LITHIC MANUFACTURING DEBRIS					
	Cores	1	2		3
	Chunks		1	4	5
	Flakes	9	15	6	30
	Chips	10	12	6	28
	Shatter	1	2	1	4
	Total	21	32	17	70
UNWORKED STONE	1	7	2		10
HISTORIC METAL				1	1
TOTAL	1	35	35	18	89

deposit although given the shallow depth a Woodland occupation seems likely.

Discussion

A large portion of 23CE258 is located on a prominent T-1 terrace almost entirely outside of the U.S. Army Corps of Engineers slough easement. A total of 89 artifacts were recovered from three test units located on or near this T-1 terrace. The nine other test units excavated on the T-0 terrace were sterile.

Based on the data reported by Roper (1977) 23CE258 appears to be a large, moderate to dense lithic scatter extending over an area of 90,000 sq m. Based on the recovery of two arrow points and one corner notched dart point similar to the Cupp type, Roper (1977) interpreted the site as a multicomponent base camp with Late Woodland and Late Archaic components present. However, Chapman (1980:308) places Cupp points within the Late Woodland period indicating a single component Late Woodland occupation is represented. The interpretation of site function was based on the location, large size, overall artifact density and range of tools recovered from the terrace. Unfortunately no tools were recovered during the present investigations and only a very small portion of the site was tested. Therefore, the interpretation of the site as a base camp remains tentative.

On the basis of the small area located within the slough easement, 23CE258 does not appear to be eligible for the National Register and no further archaeological work is recommended. Additional testing within the portions of 23CE258 outside of the easement would be required before the National Register status of the entire site can be determined.

23CE262

23CE262 consisted of a single Rice Lobed projectile point recovered from a gravel bar approximately 350 m upstream from the confluence of Alder Branch with the Sac River in 1976 (Roper 1977). It was thought to be associated with the nearby Montgomery site (23CE261) located about 1 km upstream (Figure 13). No other cultural material was recovered from 23CE262 during the 1976 investigations. Three test units were excavated along a north to south transect in the reported area of the site in 1986. Sterile stream gravel and sand was found to a depth of 40 cm below surface where the water table was encountered in these units. It appears that the "site" was an isolated projectile point find. It may have represented an extractive campsite but was more likely a redeposited artifact. It is not eligible for the National Register and no further archaeological work is recommended.

23CE263

23CE263 is located on a low terrace on Keith Island, just across the Sac River from 23CE409 (Figure 20). Other than the possible

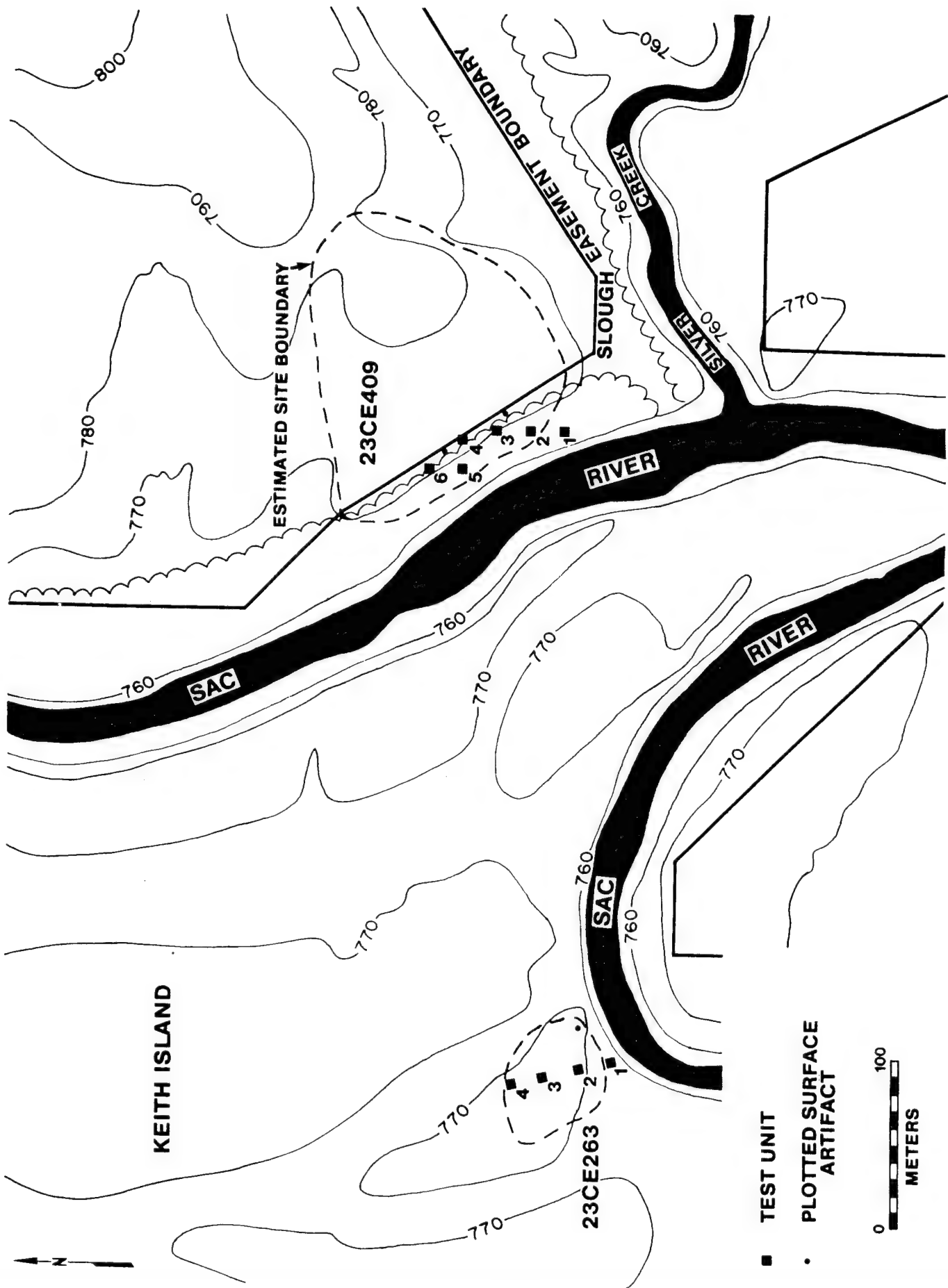


Figure 20. Location and plan view of test excavations at 23CE263 and 23CE409.

location of an isolated find reported by Roper (1977) little previous information regarding this site was available.

The 1986 investigations at 23CE263 included a pedestrian survey, surface collection, mapping and test excavations (Figure 20). The site consists of a very light lithic scatter extending over a 4000 sq m area on a low terrace in Keith Island (Figure 20). The site had been freshly plowed and visibility was 100 percent at the time of the 1986 investigations. A transect of one m test units was excavated at 20 m intervals across the site to a depth of 80 cm. Except for Test Unit 2, which contained one flake within the upper 10 cm, the units were sterile.

Similar soil profiles were found in the units excavated across 23CE263. The Ap horizon consists of a dark brown to dark yellowish brown silt loam which extends to 20 cm below surface. An A or transitional A-B horizon consisting of dark yellowish brown silt loam which extends to 20 cm below surface. An A or transitional A-B horizon consisting of dark yellowish brown silt loam extends to 65 cm below surface where it grades into B horizon dark yellowish brown silty clay loam. All of the artifacts recovered from 23CE263 were found on the surface or in the plowzone.

The base of one small corner notched arrow point (Figure 15g) and one biface fragment recovered from the surface are the only other artifacts found at 23CE263. The arrow point indicates a Woodland occupation for the site. The point is a uniface and probably dates to the latter part of the Woodland period. The small size, absence of midden staining, low artifact density and restricted range of tools found at 23CE263 indicates that the site represents a limited use extractive camp. Given the absence of intact deposits and the thin dispersed nature of the archaeological deposit at 23CE263, the site is not eligible for the National Register and no further archaeological work is recommended.

23CE409

23CE409 was initially recorded by Moffat and Houston (1986). The site is located along the U.S. Army Corps of Engineer slough easement boundary on a terrace north of the confluence of the Sac River and Silver Creek (Figure 20). As initially recorded, it consisted of a fairly dense lithic scatter extending over an area of about 16,000 sq m. The recovery of one Stone Square Stemmed and one Langtry Contracting Stemmed point suggested the presence of both Late Archaic and Woodland components at the site.

Description of the Investigations

The 1986 investigations at 23CE409 included pedestrian survey, mapping and test excavations. Most of the site was located in a wheat field outside of the U.S. Army Corps of Engineers slough easement. The

portion within the easement was covered with floodplain forest and is generally topographically lower than the portion outside of the slough easement (Figure 20). Six one m test units were excavated to depths of 80 to 140 cm below surface within the slough easement. A rather dense cultural deposit was encountered within the upper 20 to 40 cm of Test Units 2, 3, 4, 5 and 6. A lighter scatter of more deeply buried artifacts was encountered from 40 to 60 cm below surface in Test Unit 5 and from 40 to 130 cm below surface in Test Unit 2. The more deeply buried materials are located in a silty soil and appear to be a prehistoric refuse area which accumulated off the edge of the terrace. Test Unit 1 was culturally sterile.

The soil profile encountered in the test units excavated at 23CE409 consists of an upper A horizon extending from the surface to a depth ranging from 30-60 cm below surface. The A horizon is a dark brown to dark grayish brown silt loam which grades into a Bt horizon consisting of dark yellowish brown to grayish brown silty clay loam with gray mottles. The Bt horizon extends from 30-60 cm below surface to 140 cm+ below surface. Cultural materials were recovered from the A horizon in Test Units 2, 3, 4, 5 and 6, while cultural materials were found in the Bt horizon in Test Units 2 and 5.

Artifact Assemblage

The artifact assemblage recovered from 23CE409 includes nine projectile points, one bifacial drill, four bifacial blanks, 16 biface fragments, one unifacial scraper, 25 modified flakes, 787 pieces of lithic manufacturing debris, six ground stone fragments and 56 pieces of unworked stone (Table 15).

Seven of the 905 artifacts from 23CE409 are from the surface. The remaining material was recovered from Test Units 2 through 6. A light density of lithic debris extended from the surface to a depth of 130 cm in Unit 2. The cultural deposits were most concentrated in Test Unit 3 where a total of 610 artifacts were recovered from the surface to a depth of 50 cm.

A total of nine projectile points were recovered from 23CE409. Five of these, including one small arrow point and four larger dart points, are sufficiently complete to identify. The arrow point is a small corner notched form made from heated Burlington chert which resembles the Scallorn type (Figure 15h). It is triangular in plan form and has a plano-convex cross-section. The larger points include two corner notched, one basally notched and one contracting stemmed point. The corner notched point is made from a triangular heated Burlington chert preform with a lenticular cross-section (Figure 15i). It has deep corner notches and a concave base. The second is a smaller triangular form with a lenticular cross-section and a straight base made from an heated nonlocal gray chert (Figure 15j). The basally notched point is made from a large broad triangular Jefferson City chert preform with a lenticular cross-section (Figure 15k). It conforms with the Smith Basal Notched type. The contracting stemmed point is a Langtry point made from a triangular Burlington chert preform with a lenticular cross-

section (Figure 151).

Table 15. Artifact assemblage from 23CE409.

	SURFACE	TEST UNITS					TOTAL
		2	3	4	5	6	
CHIPPED STONE TOOLS							
Projectile Points	5		2		1	1	9
Bifacial Drill	1						1
Bifacial Blanks		1	2		1		4
Biface Fragments	1	2	9	1	2	1	16
Unifacial Scraper			1				1
Modified Flakes		3	21			1	25
Total	7	6	35	1	4	3	56
LITHIC MANUFACTURING DEBRIS							
Cores			8	1	2	3	14
Chunks			18	1	1	1	21
Flakes		27	146	24	29	18	244
Chips		13	303	45	23	36	420
Shatter		14	57	6	5	6	88
Total		54	532	77	60	64	787
GROUND STONE FRAGMENTS		1	5				6
UNWORKED STONE		8	38	4	3	3	56
TOTAL	7	69	610	82	67	70	905

Discussion

The portion of 23CE409 located within the U.S. Army Corps of Engineers slough easement contains Late Archaic and Late Woodland cultural materials extending to a depth of 40 cm. More deeply buried deposits were encountered from a depth of 60 to 130 cm in two test units.

23CE409 is situated at the confluence of the Sac River and Silver Creek on a broad gently sloping terrace. This location would have provided the prehistoric occupants of the site access to both riparian forest and floodplain environments as well as easy access to the uplands. The site covers an area of at least 16,000 sq m. This large size coupled with the density of debris observed on the surface and the range of tools recovered indicates the site was intensively occupied over a substantial period of time. A dense accumulation of debris was encountered at the edge of the terrace. In this area, over 600 artifacts were found in Test Unit 3 representing two thirds of all the material recovered from the test excavations. This accumulation of debris is probably related to refuse disposal similar in nature to that observed

at other Woodland (Parisi 1985) and Late Archaic (Schmits 1985) sites in Missouri. Tools include both chipped stone and ground stone implements indicating that hunting, butchering, hideworking, tool manufacture, woodworking, drilling, gathering and vegetal food processing were performed. Overall, 23CE409 appears to have been intensively occupied as a base camp during the Late Archaic period. Woodland materials occurred less frequently and suggest a less intensive residential occupation during this later time period.

The portion of the site within the slough easement has the potential to provide significant information on the Late Archaic chronology and settlement-subsistence patterns in the project area and is recommended to be eligible for the National Register of Historic Places. The site does not appear being adversely impacted at this time. However, the site should be periodically monitored to determine the impact of erosion resulting from power releases on the area of the site within the U.S. Army Corps of Engineers slough easement.

23CE423

23CE423 was first located during the 1986 survey and consists of a light lithic scatter located on a low terrace east of an old channel of the Sac River about 200 m north of 23CE227 (Figure 10). Field investigations included pedestrian survey, mapping and test excavations. The site covered an estimated area of 200 sq m. A transect of three one m test units was excavated to a depth of 80 cm down the center of the site adjacent to the slough easement boundary (Figure 21). A total of 17 artifacts were recovered during the 1986 investigations including one biface fragment, two modified flakes, eleven pieces of debitage, one piece of unworked stone and two historic artifacts. Six pieces of debitage were recovered in the upper 40 cm of Test Unit 2, two pieces of debitage were recovered in the upper 40 cm of Test Unit 3 and one unworked stone was recovered in Test Unit 1.

The test excavations encountered an upper A horizon consisting of dark brown silt loam which extended from the surface to a depth of 20 cm. A transitional A2 or A-B horizon consisting of a brown silt loam extended from 20 to 40 cm where it grades into a B horizon consisting of a dark yellowish brown silty clay loam. The B horizon extended from 40 cm to a depth of 80 cm+. Cultural materials are restricted to the Ap and transitional A2 or A-B horizons at 23CE423.

No diagnostic artifacts were recovered and the cultural affiliation of 23CE423 is unknown. Given the small size of the site, the light, dispersed scatter of material present, lack of midden staining and a restricted range of tools recovered, 23CE423 appears to represent a special purpose extractive camp. It may represent an activity area associated with 23CE227 located 200 m to the southeast. The site has little potential to significantly add to the knowledge of the local prehistory and is not eligible for the National Register. No further

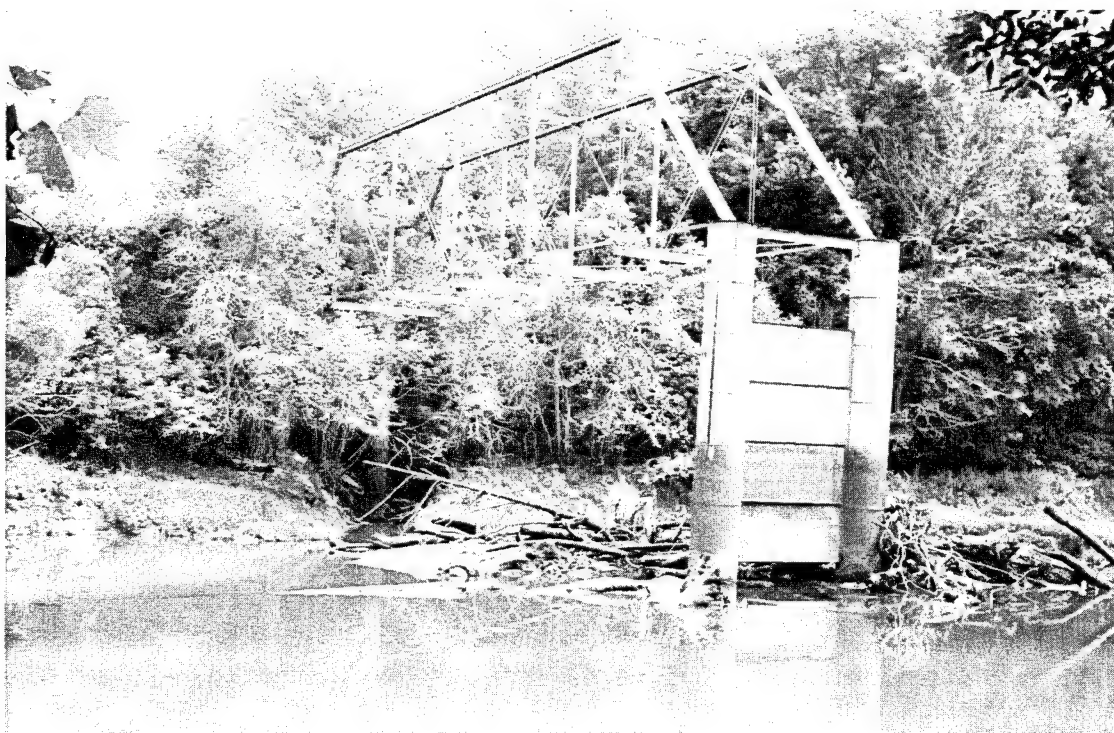


Figure 21. General views of 23CE423 and 23CE424. View to the north of excavations in progress at 23CE423 (upper). View to the north of the bridge at 23CE424 (lower).

archaeological work is recommended.

23CE424

This site is the remains of the old Highway J bridge over the Sac River. It is located approximately 500 m east of the new Highway J bridge (Figure 5) and consists of the northern span of a metal truss bridge which is supported by a pair of metal pylons (Figure 21). The southern span of the structure and bridge supports have been removed. The remaining northern span of the bridge is about 30 m in length and 5 m in width. The wooden planking of the bridge has been removed and the bridge appears to have been demolished. This site was once a significant feature relating to twentieth century Historic period transportation. The 1908 Atlas of Cedar County indicates a bridge at this location (Ogle 1908). However, the site has been largely destroyed and does not appear to warrant nomination to the National Register.

23CE425

23CE425 is located on a terrace on the east side of Alder Branch approximately 2 km southeast of its confluence with the Sac River (Figure 13). The site consists of a light discontinuous lithic scatter extending over an area approximately 250 m in length by 90 m in width. More than half of the site is outside of the U.S. Army Corps of Engineers slough easement. The area of the site within the slough easement is approximately 100 m in length and 90 m in width. This area is bisected from east to west by a large swale. The base and edges of the swale have been eroded down to the B horizon by water runoff.

Description of the Investigations

The site was in a cultivated field during the 1986 survey and had excellent (100 percent) surface visibility. Test excavations were conducted at the site in August, 1986. At this time the site was covered by waist high soy beans and surface visibility was reduced, ranging from 20 to 30 percent. The investigations included pedestrian survey, mapping and the excavation of two transects of test units at 20 m intervals across the site (Figure 13). The transects were situated along an east-west axis and crosscut the topographically highest and least eroded area of the site within the slough easement. All eight test units were excavated to a depth of 80 cm below surface. A light scatter of cultural material was restricted to the upper 40 cm. A low density of lithic debris, consisting of debitage and burnt rock, was encountered in Test Units 2, 5, 6 and 7. Test Units 1 and 4 each yielded only one artifact, while Test Units 3 and 8 were sterile. Thirty-six of the 49 artifacts recovered were from 20 to 40 cm below surface.

The soil profile at 23CE425 exhibits an upper Ap horizon consisting of a brown silt loam extending to a depth of 20 cm. An underlying transitional A or A-B horizon extends from 20 to 30 cm where it grades into a B horizon consisting of a dark brown silty clay loam. Cultural materials are restricted to the Ap, A-B and upper B horizons.

Artifact Assemblage

A total of 59 artifacts were recovered from 23CE425 including two projectile points, one bifacial blank, one unifacial scraper, one modified flake, 27 pieces of lithic manufacturing debris and 26 pieces of unworked stone. Both projectile points are from the surface. The first is a medium-sized stemmed dart point with a straight base. It is made from a gray Burlington chert which appears to have been heated. It has been reworked into a scraper and is insufficiently complete for typological classification. The second point is a proximal section of a small side notched form with a concave base. It is made from local gray and white chert which appears to have been heated. The base and side notches have been heavily ground. The point is similar to the Jakie Stemmed type which may indicate a Middle Archaic cultural affiliation for the site. The other three chipped stone tools and the ground stone tool were also from the surface. The chipped stone tools include one bifacial blank, one large unifacial scraper and a modified flake. The ground stone implement is a sandstone cobble which has a battered end and two concave depressions and appears to have functioned as a nutting stone.

Discussion

23CE425 is a large light lithic scatter located on a terrace on the east side of Alder Branch. The site covers an estimated area of 23,000 sq m, most of which is located outside of the U.S. Army Corps of Engineers slough easement. The portion of the site situated within the slough easement covers an area of approximately 9000 sq m. This low lying area has been impacted by agricultural related erosion. Most of the top soil has been scoured off the field and the B soil horizon is visible on the surface. Test excavation indicates that a thin intact cultural deposit is present from 20 to 40 cm below surface. Projectile points indicate the presence of a Middle Archaic component, however this is not conclusive due to the small sample of points recovered. The large size, light density and discontinuous distribution of lithics at the site suggests that 23CE425 represents a residential camp site. Tools recovered from the site indicate that hunting, butchering, hide processing, tool manufacture, tool maintenance and vegetal food processing occurred at the site. The nutting stone may indicate a fall seasonal occupation. The light density and discontinuous distribution of lithic debris suggests that a series of reoccupations or perhaps separate activity areas may be represented at the site.

The portion of 23CE425 located in the U.S. Army Corps of Engineers slough easement is situated on low lying or sloping terrain which has been impacted by agricultural related erosion. Only a light density of materials are present and the site does not appear to be eligible for the National Register. The majority of the site area, however, is located on private land and has not been investigated. Further test excavations within the remainder of the site would be required to make a definitive determination of National Register eligibility. Since potentially significant deposits do not occur within the U.S. Army Corps of Engineers slough easement, no further archaeological work is recommended for 23CE425.

23CE426

23CE426 was located during the 1986 survey of the Highway J West survey area. Chipped stone tools, ground stone tools and lithic manufacturing debris were observed eroding from a cutbank along a meander of the Sac River (Figure 22). Flakes were observed eroding from a depth of 40 to 60 cm below surface along the cutbank. One corner notched projectile point was recovered from the surface of the cutbank. The specimen is similar to Late Archaic forms. Aaron Brauer, who lives in the vicinity of the site, has recovered several points from this site during the last five years including Rice Lobed and Rice Lanceolate points. These points indicate the presence of an Early to Middle Archaic component as well as a Late Archaic component.

Description of the Investigations

The test excavations at 23CE426 included an intensive pedestrian survey of the cutbank, mapping and the excavation of test units and backhoe trenches (Figure 23). Surface visibility along the cutbank was excellent. Lithic debris eroding out of the cutbank was primarily concentrated from 30 to 60 cm below surface, but extended to a maximum depth of 2 m. The lithic debris extended along the cutbank for a distance of 130 m. Eight test units were excavated at 20 m intervals along three parallel transects oriented perpendicular to the cutbank. The transects were 40 m apart. Test units were excavated to depths varying from 80 to 110 cm below surface. Cultural material was largely restricted to the upper 60 cm in Units 1, 2 and 3, and to the upper 40 cm in Test Units 5 and 6. Evidence of a more deeply buried component was encountered from 80 to 110 cm below surface in Test Unit 4. Three backhoe trenches were excavated to a depth of 3 m to determine if deeper cultural deposits were present. Although cultural material associated with the upper component was encountered in each trench, no more deeply buried deposits were encountered.

The soil profile at 23CE426 consists of an upper A horizon consisting of a dark brown silt loam that extends from the surface to a depth of 20-30 cm. A transitional A-B horizon, consisting of a very dark grayish brown silt loam, extended from a depth of 20-30 cm to a

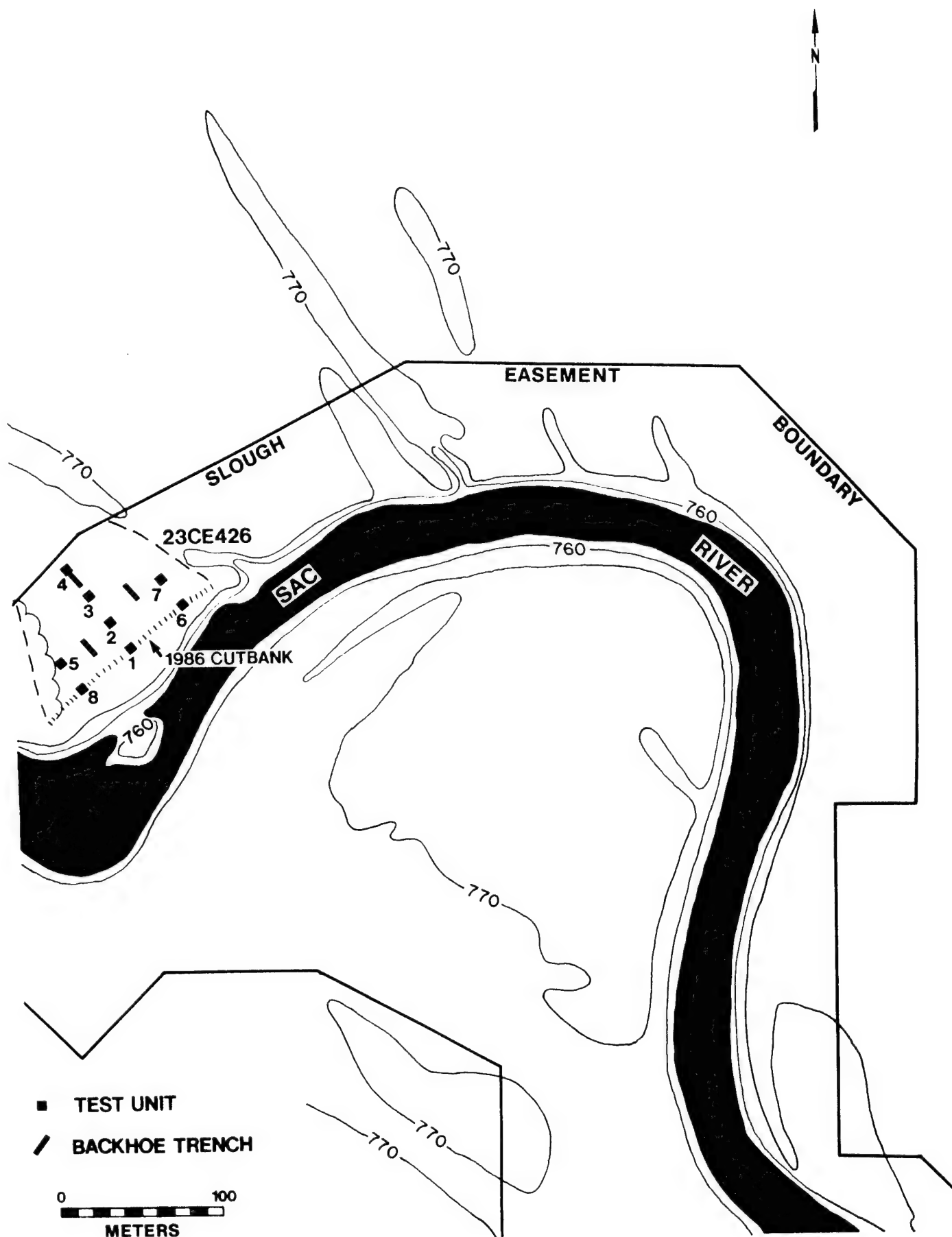


Figure 22. Location and plan view of test excavations at 23CE426.



Figure 23. General views of 23CE426 and 23CE427. View of the cutbank at 23CE426 (upper). View to the north of excavations in progress at 23CE427 (lower).

depth of 50-80 cm. The underlying B horizon is a dark yellowish brown silty clay which extends from 50-80 cm below surface to 110 cm+. Cultural materials associated with the upper component are located in the A or A-B horizons, while the lower component encountered in Test Unit 4 occurred in the B horizon.

Cultural Feature

One feature was encountered in Test Unit 8 at a depth of 35 cm below surface. It consisted of a small cluster of burnt rock and associated flecks of charcoal, burnt soil and debitage and was probably a hearth. Insufficient charcoal was present for dating and no temporally diagnostic artifacts were associated with the hearth.

Artifact Assemblage

A total of 194 artifacts were recovered from 23CE426 including three projectile points, one bifacial preform, one bifacial blank, three bifacial scrapers, two unifacial scrapers, one flake scraper, one modified chunk, six modified flakes, two manos, one hammerstone, four ground stone fragments, 101 pieces of lithic manufacturing debris, one piece of unworked shell and 72 pieces of unworked stone (Table 16).

The three projectile points were recovered from the cutbank and include a medium-sized corner notched dart point with an expanding stem and straight base (Figure 24a), a small corner notched point with an expanding stem and straight base (Figure 24b), and a large basally notched dart point comparable to the Smith Basal Notched type (Figure 24c). All three points are Burlington chert and are associated with the Late Archaic component at the site.

Seven points have also been recovered from the cutbank by Aaron Brauer. His collection includes three medium-sized corner notched points with expanding stems and straight to slightly convex bases (Figure 24d-f), two stemmed points (Figure 24g-h) and two lanceolate points (Figure 24i-j). The corner notched points are similar to those recovered during the 1986 investigations. One of the stemmed points is a large Rice Lobed type and the other is a medium-sized concave based dart point. Rice Lobed points date to the Middle Archaic period (Chapman 1975). Various concave based stemmed points, such as the Jakie stemmed type, are also considered to date to the Middle Archaic period (Chapman 1975). One of the lanceolate points is similar to the Rice Lanceolate type, associated with the Early Archaic period. The second specimen is similar to points from the nearby Montgomery site. These points in the Brauer collection may indicate the presence of an Early Archaic or Dalton occupation of 23CE426.

Discussion

23CE426 is a large stratified multicomponent site eroding from a cutbank of the Sac River. Test excavations document the presence of two

Table 16. Artifact assemblage from 23CE426.

	SURFACE	CUTBANK	TEST			UNITS					BACKHOE TRENCES			TOTAL
			1	2	3	4	5	6	7	8	1	2	3	
CHIPPED STONE TOOLS														
Projectile														
Point	1	2												3
Bifacial														
Preform		1												1
Bifacial														
Blank	1													1
Biface														
Fragments		3												3
Unifacial														
Scrapers		1				1								2
Flake														
Scraper				1										1
Modified														
Chunk			1											1
Modified														
Flakes	2	1			1			1	1					6
Total	4	8	1	1	1	1		1	1					18
LITHIC MANUFACTURING DEBRIS														
Cores	1	1										1		3
Chunks		1	3		1			1	1					7
Flakes	6	2	17	8	4	4	5	2	4	8	2		1	63
Chips			6	6	6	5	2		1	1				27
Shatter			3	1	1			1						6
Total	7	4	29	15	12	9	7	4	6	9	2	1	1	106
GROUND STONE TOOLS														
Mano	2													2
Hammer-														
stone								1						1
Ground Stone														
Fragments						1			3					4
Total	2					1		1	3					7
UNWORKED														
STONE	1	1	11	12	3	18	4	2	12	6		1	1	72
UNWORKED														
SHELL												1		1
TOTAL	14	13	41	28	16	29	11	8	22	15	3	2	2	204

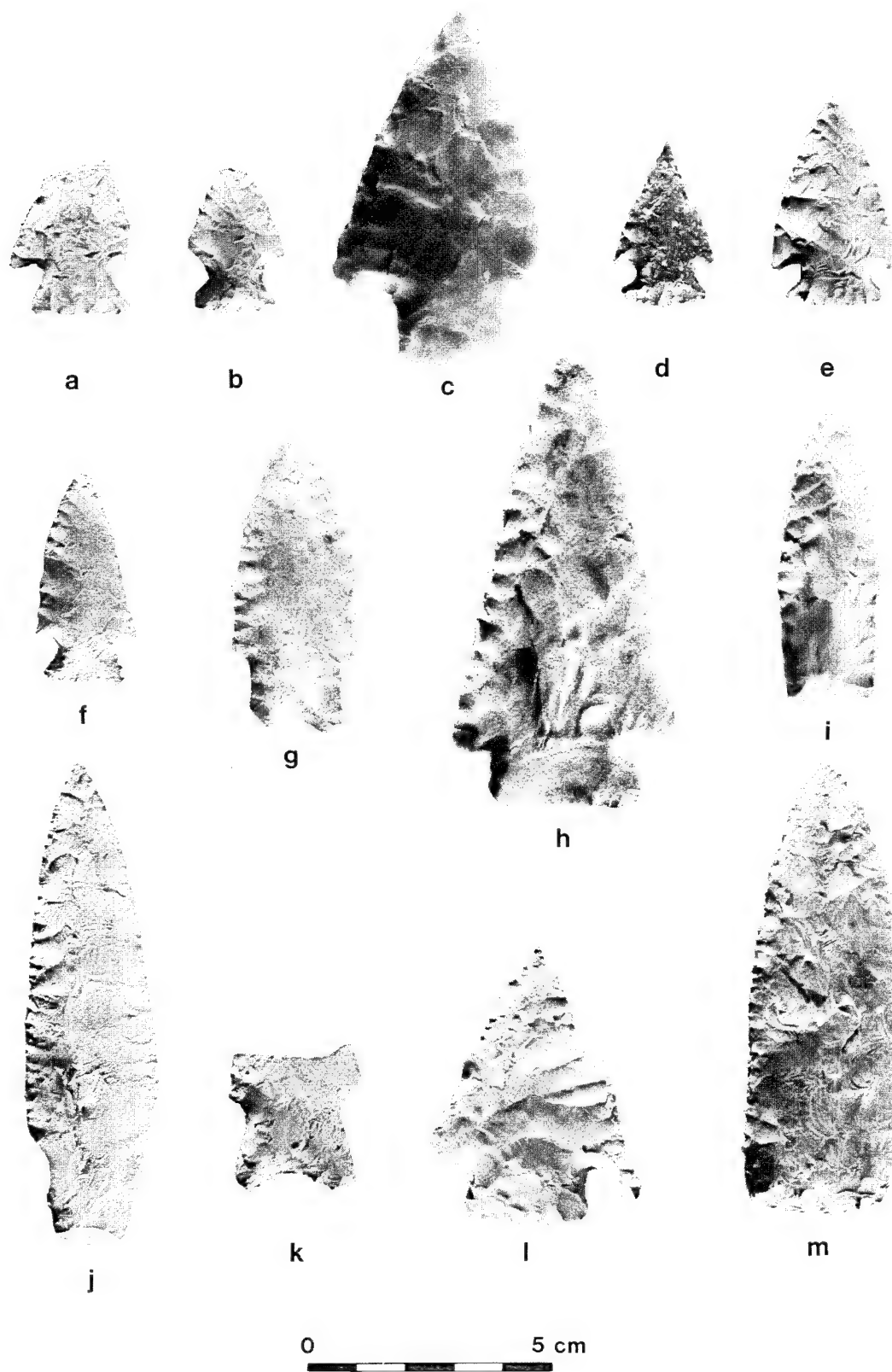


Figure 24. Projectile points from 23CE426 and 23CE427: a-j, projectile points from 23CE426; k-m, projectile points from 23CE427.

components. The upper component is located from 30 to 60 cm below surface while the lower occurs between 80 and 110 cm below surface. Based on the recovery of Late Archaic projectile points and on the depth of the deposits, both of these components appear to date to the Late Archaic period. However, the recovery of Early and Middle Archaic point styles from the site by Aaron Brauer indicates that an earlier, and presumably deeper, component is present. One flake was recovered from 2 m below surface along the cutbank and could be evidence of an earlier occupation.

23CE426 is located within a nearly level terrace adjacent to the Sac River. The horizontal distribution of the two stratified components varies within the site area. Near the central portion of the site boundary the components overlap and they both were encountered in Test Units 1, 2 and 3. The upper component extends further to the east and west and is present in Test Units 5, 6, 7 and 8. No evidence of the lower component was encountered in these units. In contrast, the lower component extends to the north to Test Unit 4 where no evidence of the upper component was found. The observed difference in horizontal distributions suggests that the more extensive upper component is largely confined to the U.S. Army Corps of Engineers slough easement while the lower component extends to the north beyond the easement boundary.

Artifact density is similar for both components. An average of 21 artifacts were recovered from each of the test units. Overall, the artifact assemblages are very similar and indicate that a fairly wide range of activities were performed including hunting, butchering, hideworking, tool manufacture and maintenance, gathering and vegetal food processing. Given its size and relatively low artifact density as well as the absence of pronounced midden staining or habitation features, 23CE426 appears to have functioned as a residential camp that was probably occupied on a seasonal basis rather than as a long term multi-seasonal base camp.

The small to medium-sized corner notched points associated with the upper component at the site are similar to types from the Little Green Heron site (23GR535) which date to the very late Late Archaic period (Parisi 1985). This period is poorly known in southwestern Missouri and consequently, this site can yield significant information regarding late Late Archaic settlement patterns and cultural chronology. The presence of point styles affiliated with earlier Late Archaic phases, such as Smith Basal Notched, Middle Archaic Rice Lobed, and Early Archaic Rice Lanceolate, indicates that this site could yield data on earlier Archaic periods in the Sac River valley which are also poorly known. Consequently, 23CE426 is recommended to be eligible for the National Register of Historic Places. The site is currently being heavily impacted by erosion of the cutbank. It is recommended that steps be taken to mitigate this adverse impact either through bank stabilization or data recovery excavations. Given the extent of the site and the location of the cutbank, bank stabilization does not appear to be a viable alternative. Since 23CE426 is being heavily impacted by erosion,

it is recommended that data recovery excavations be undertaken as soon as possible.

23CE427

23CE427 was first located during the 1986 survey eroding from a cutbank of Bear Creek approximately 600 m upstream from the confluence of Bear Creek and the Sac River (Figure 23). The site consisted of a thin cultural stratum located at a depth of 3 m below the surface. The cultural zone extended for a distance of 50 m along the cutbank and contained debitage and the base of an expanding stemmed projectile point similar to those referred to by Chapman (1975) as Jakie Stemmed. It also resembles Johnson or Rodgers Flared points recovered from Early and Middle Archaic contexts at Rogers Shelter (Kay 1982a:477).

Description of the Investigations

Test investigations at 23CE427 included two units excavated along the cutbank profile (Figure 25). Test Unit 1 consisted of a 2 by 2 m unit excavated to a depth of 3 m below surface. The southwest quadrant was taken to a depth of 3.5 m. Test Unit 2 was a 1 by 2 m unit excavated to a depth of 3 m below surface. A light scatter of flakes and one Afton point were recovered from a depth of 160-170 cm in Test Unit 1 indicating the presence of a Late Archaic component at this depth. A second more substantial component was located from 260-270 cm below the surface in both units. This component contained a dense concentration of lithic debris including chipped and ground stone tools, burnt rock and lithic manufacturing debris.

The soil profile encountered in the test excavations consists of a dark brown silt loam A horizon which extends from the surface to a depth of 45 cm. A transitional A-B horizon consisting of a dark brown silt loam extends from 45-70 cm where it grades into a dark brown to brown silty clay loam B horizon. The B horizon was mottled with iron oxide stains from 95-170 cm below surface. From 170-300 cm below surface, the B horizon grades into a sandy clay loam mottled with iron oxide stains. The two Archaic cultural zones were located in the B horizon at depths of 160-170 and 260 to 270 cm below surface.

Cultural Feature

A feature consisting of a stain containing abundant charcoal and burnt earth intermixed with rock and one chert flake was encountered in the southern half of Test Unit 1. The feature was initially observed as a band of charcoal eroding from the cutbank at a depth of 260 cm. Upon excavation the feature extended from 240 to 260 cm below surface occurring immediately above the lower cultural level with which it appeared to be associated. The feature was roughly elliptical in shape and was apparently a shallow basin shaped hearth. Most of the feature has been destroyed by cutbank erosion.

Radiocarbon Date

A large sample of well preserved wood charcoal recovered from Feature 1 was submitted to Beta Analytic, Inc. for radiocarbon dating. The sample provided a date of 4450 ± 90 years B.P. for the lower component at 23CE427. This date suggests the lower component falls within either the late Middle Archaic or early Late Archaic period.

Artifact Assemblage

The artifact assemblage from 23CE427 includes two projectile points, one bifacial knife, three biface fragments, eight modified flakes, 127 pieces of lithic manufacturing debris, one mano, one metate, one hammerstone and 91 pieces of unworked stone (Table 17).

One projectile point and six pieces of debitage were recovered from the cutbank. The projectile point is the proximal section of a Johnson or Jakie Stemmed point (Figure 24k). One projectile point, four pieces of debitage and four pieces of unworked stone were recovered from 160-170 cm in Test Unit 1. The projectile point appears to be a Late Archaic Afton Corner Notched variety (Figure 24l). One bifacial knife (Figure 24m), three biface fragments, eight modified flakes, one mano, one metate, one hammerstone, 97 pieces of debitage and 75 pieces of unworked stone were recovered from 260-270 cm below surface in Test Unit 1. Test Unit 2 produced two pieces of debitage from 100-110 cm, two pieces of debitage and five pieces of unworked stone from 190-200 cm, 13 pieces of debitage and seven pieces of unworked stone from 260-270 cm and three pieces of debitage from 270-280 cm.

Discussion

23CE427 is a stratified, multicomponent site which is in the process of eroding out of a cutbank of Bear Creek. The upper component is represented by a very light scatter of lithic debris between 160-170 cm below surface. The Afton projectile point recovered from this level affirms a Late Archaic affiliation. The lower component is represented by a higher density of lithic debris between 260 and 270 cm below surface. A radiocarbon date of 4450 years B.P. was recovered from a hearth immediately above this level at a depth of 260 cm.

This date and the concave based expanding stemmed projectile point indicate a late Middle Archaic or early Late Archaic cultural affiliation for the lower component. Similar points have been recovered in central Missouri at site 23B0971 and radiocarbon dated between 4500 and 3800 years B.P. (Reeder et al. 1983) and at 23JA155 in the Kansas City area, a late Middle Archaic Jacomo phase component radiocarbon dated at 5510 ± 120 to 5550 ± 100 years B.P. (Schmits 1986).

23CE427 is deeply buried within the cutbank of Bear Creek and the size of the site is unknown. The distribution of artifacts along approximately 50 m of the cutbank suggests that an estimated size of roughly 2000 sq m would not be unreasonable as a minimum distribution

Table 17. Artifact assemblage from 23CE427.

		TEST UNITS					
	CUTBANK	E500 N499	E500 N500	E501 N499	E501 N500	E505 N500	TOTAL
CHIPPED STONE TOOLS							
Projectile Points	1		1				2
Bifacial Knife			1				1
Biface Fragments			1	1	1		3
Modified Flakes			4	4			8
Total	1		7	5	1		14
LITHIC MANUFACTURING DEBRIS							
Cores		3	4	1	1		9
Chunks		1	3	1	2	1	8
Flakes	6	6	22	17	24	13	88
Chips			1	5	8	6	20
Shatter			1		1		2
Total	6	10	31	24	36	20	127
GROUND STONE TOOLS							
Mano			1				1
Metate					1		1
Hammerstone		1					1
Total		1	1		1		3
UNWORKED STONE		9	27	16	27	12	91
TOTAL		7	20	66	45	65	235

for the lower component. However, this estimate is highly speculative. The density of the upper Late Archaic occupation is very low and this component probably represents a small temporary extractive camp. The projectile point and few pieces of debitage suggest that hunting was the primary activity. In contrast the lower component contains a much greater artifact density and variety of tools. Hunting, butchering, hide processing, woodworking, tool manufacture, tool maintenance, gathering and vegetal food processing are inferred by the assemblage. The feature associated with this component indicates that food was cooked and consumed at the site. The lower component at 23CE427 appears to have been occupied as a residential camp site.

The site has the potential to significantly add to the knowledge of the Middle and Late Archaic occupations of the project area and is considered eligible for nomination to the National Register of Historic

Places. The site is being adversely impacted by erosion caused by fluctuations in the level of Bear Creek during peak power generation at Stockton Dam. Over 20 cm of deposits were eroded from the cutbank in a 25 day period. At this rapid rate of erosion, the site faces imminent destruction. It is therefore recommended that steps be taken to stabilize the cutbank to prevent further erosion and destruction of this significant archaeological deposit. If this is not feasible, it is recommended that intensive archaeological data recovery investigations be initiated to mitigate the adverse effects of continuing erosion on this important cultural resource.

SUMMARY AND RECOMMENDATIONS

In the late spring and early summer of 1986, Environmental Systems Analysis, Inc. conducted an intensive cultural resources survey and National Register testing project at the Downstream Stockton Project area in Cedar County, Missouri. The survey resulted in the recordation of five new archaeological sites designated as sites 23CE423 through 23CE427 and the relocation of one previously recorded site, 23CE409. A previously recorded site, 23CE262, was not relocated.

The original contract was modified to include National Register testing at four of these newly recorded sites in the project area (23CE423 and 23CE425-23CE427) and at 14 previously recorded sites in the project area: 23CE52, 23CE226, 23CE227, 23CE229, 23CE230, 23CE238, 23CE239, 23CE242, 23CE245, 23CE253, 23CE258, 23CE262, 23CE263 and 23CE409). Based on the results of this work sites 23CE226, 23CE238, 23CE409, 23CE426 and 23CE427 are recommended for nomination to the National Register of Historic Places. 23CE226, 23CE238 and 23CE409 are not being adversely impacted and no further work is recommended at this time although these sites should be periodically monitored. 23CE426 and 23CE427 are being adversely affected and protective measures should be taken to stabilize the cutbanks currently encroaching on these sites. If that is not feasible, then intensive archaeological data recovery should be undertaken in the near future at these two sites.

Sites 23CE242, 23CE245, 23CE262, 23CE263 and 23CE423 are located largely or entirely within the U.S. Army Corps of Engineers slough easement, are not considered eligible for the National Register and therefore no further work is recommended. However, only small portions of the remainder of the sites tested below Stockton Dam occurred within the U.S. Army Corps of Engineers slough easement. Consequently, although the portions within the government easement do not contain significant deposits, complete determinations of National Register eligibility could not be made for sites 23CE52, 23CE227, 23CE229, 23CE230, 23CE253, 23CE258 and 23CE425. Further testing would be required within the portions of these sites outside the government easement to ascertain their National Register status. However no further work or archaeological management of the portions of these sites within the government slough easement is recommended at this time.

Given the presence of deeply buried deposits encountered at sites 23CE426 and 23CE427 during the present investigations and on the reports of a number of local residents within the Downstream Stockton area that unrecorded buried sites are in the process of being destroyed within the slough easement, it is recommended that additional surveys of the cutbanks of the Sac River and its tributaries be conducted. Such survey is easily performed by canoe and should be done periodically as the effects of continuing erosion will result in the continuing exposure of archaeological sites. Only by such persistent monitoring of the Downstream Stockton corridor can an accurate and up to date inventory of the cultural resources within the government easement lands be realized.

VIII. SUMMARY OF THE SURVEY AND TESTING AT DOWNSTREAM STOCKTON LAKE

Larry J. Schmits and John G. Hedden

INTRODUCTION

Stockton Lake is a flood control and power generation project located on the Sac River in southwestern Missouri and operated by the U.S. Army Corps of Engineers, Kansas City District. The U.S. Army Corps of Engineers has obtained sloughing easements along an approximately 26 km stretch of the Sac River below Stockton Lake. This area along the channel of the Sac River and its tributaries is known as the Downstream Stockton Lake Project Area. A number of cultural resources management projects have been conducted in the Downstream Stockton Project area (Roper 1977; Collins et al. 1983; Pertula and Purrington 1983; Moffatt and Houston 1986). As a result of these efforts, the major part of the project area had been inventoried for cultural resources and a number of sites had been evaluated to determine their National Register status. The U.S. Army Corps of Engineers, Kansas City District contracted with Environmental Systems Analysis, Inc. for a program of archaeological survey and testing in the Downstream Stockton Project area to complete this work. The 1986-1987 project included an intensive survey of 13 parcels of sloughing easements consisting of approximately 148 ac and the National Register testing of 14 sites in addition to those located in the survey area.

The research goals for the 1986-1987 Downstream Stockton Project included the specific objectives of meeting the management needs of inventoring the 13 parcels specified for survey and evaluating the sites located, along with the additional sites to be tested and the more general research objectives of reconstruction of the culture history and investigation of prehistoric settlement patterns and site functions for the project area. This chapter presents a summary of the results of the program.

The 1986 survey located five new archaeological sites designated as sites 23CE423 through 23CE427 and relocated one previously recorded site, 23CE409. One additional site previously recorded in this area, 23CE262, was not relocated by the 1986 survey. Four of the newly recorded sites are prehistoric archaeological sites. 23CE423 is a light lithic scatter of unknown cultural affiliation, while 23CE425 appears to be a Middle Archaic campsite. 23CE426 is a Late Archaic site eroding from a cutbank of the Sac River while 23CE427 is a Middle Archaic site eroding from a cutbank of Bear Creek. 23CE424 is a partially standing historic bridge which formerly spanned the Sac River near the present route of Highway J.

National Register testing was also conducted at the four newly four recorded prehistoric sites (23CE423, 23CE425, 23CE426 and 23CE427). The

14 previously recorded sites tested include 23CE52, 23CE226, 23CE227, 23CE229, 23CE230, 23CE238, 23CE239, 23CE242, 23CE245, 23CE253, 23CE258, 23CE262, 23CE263 and 23CE409. The test excavations were limited to investigation of the portions of the sites located within the slough easements.

DESCRIPTION OF THE STUDY AREA

The Downstream Stockton Project area is located along the Sac River in north-central Cedar County just below Stockton Lake in the Upper Osage drainage basin. The project area consists of government easements which could be affected by sloughing and is restricted to the lowlands along the Sac River and its tributaries. It is bounded on the north by the town of Caplinger Mills, and on the south by Stockton Dam. Almost 26.5 linear km of the Sac River and 1.8 linear km of Bear Creek are included in the project area.

The project area is located on the eastern edge of the Springfield Plateau which consists of an undulating rolling plain underlain primarily by Mississippian age cherty limestone. The Springfield Plateau grades into the Ozark or Salem Plateau to the east of the project area in eastern Polk County. The Salem Plateau has a rugged topography consisting of narrow, sharply dissected stream divides, deep valleys and abundant outcrops of the underlying bedrock. The more westerly Springfield Plateau is less dissected than the Salem Plateau and has broader upland divides and narrow less deeply entrenched stream valleys (Hughes 1982). The deeper and more fertile uplands soils were generally formed under prairie vegetation while soils along streams and rivers were formed under forest vegetation (Branson 1944; Benn 1982). Outcrops of Keokuk, Burlington, Chouteau and Reeds Spring limestone and chert formations are common in the project area.

The Downstream Stockton area has a humid continental climate characterized by a large annual temperature range and extremes in precipitation. Average annual precipitation is 100.9 cm and is fairly evenly distributed throughout the year with the most occurring in late spring through early fall. The major climatic characteristics for the region are low winter rainfall and snowfall, occasional summer droughts and the dominance of moist tropical air from the Gulf of Mexico in the summer months.

The vegetation of the area consists of a tall grass prairie-forest mosaic. Dominant plant species present along the floodplains and low terraces of the larger river and stream valleys include Ward's willow, sycamore, elm, bitternut hickory and many prairie herbs. Plant associations within the uplands include the oak-hickory forest, oak barrens and tall grass prairie dominated by Bluestem (Andropogon) and Indian Grass (Sorghastrum).

CULTURAL SEQUENCE OF THE SAC RIVER DRAINAGE

The cultural sequence of the Sac River drainage can be outlined on the basis of previous investigations in the Downstream Stockton study area (Roper 1977; Collins et al. 1983; Pertula and Purrington 1983; Moffat and Houston 1986), from data obtained from the upper Sac River drainage in the Stockton Lake project (Calabrese et al. 1969; Pangborn et al. 1971; Nichols et al. 1980; Wood and Brock 1985) by other work conducted along the Osage drainage, such as at the Truman Lake approximately 50 km north of the project area (Wood and McMillan 1976; Kay 1982a, 1982b; Roper 1981) and from investigations conducted along the James River approximately 60 km to the south (Douthit 1981).

Following the completion of the present 1986-1987 investigations, a total of 79 sites have been identified in the Downstream Stockton study area. A total of 41 sites are located on government sloughing easements and 38 sites are located in the immediate vicinity. These 79 sites contain a total of 76 identified components including one Dalton, seven Middle Archaic, 21 Late Archaic, 41 Woodland and six Historic Euroamerican components. Additionally, 25 sites contain unknown prehistoric components (Table 18).

Table 18. Cultural affiliations for sites in the Downstream Stockton Project area.

CULTURAL AFFILIATION	NUMBER	PERCENT
Dalton	1	1.0
Middle Archaic	7	6.9
Late Archaic	21	20.8
Woodland	41	40.6
Historic Euroamerican	6	5.9
Unknown	25	24.8
TOTAL	101	100.0

The Paleo-Indian period is normally defined by the presence of fluted point forms, especially Clovis points. While no Clovis sites have been located or encountered along the Osage drainage several points are present in private collections (Roper 1981). Roper suggests that the near exclusive absence of fluted points indicates that early sites are either not present, have been buried or have been scoured out by the river action.

There is more evidence of Dalton occupation along the Osage drainage including the lower component at Rodgers Shelter to the east along the Pomme de Terre River (McMillan 1976a) and the Montgomery site in the Downstream Stockton Project area (Collins et al. 1983). In

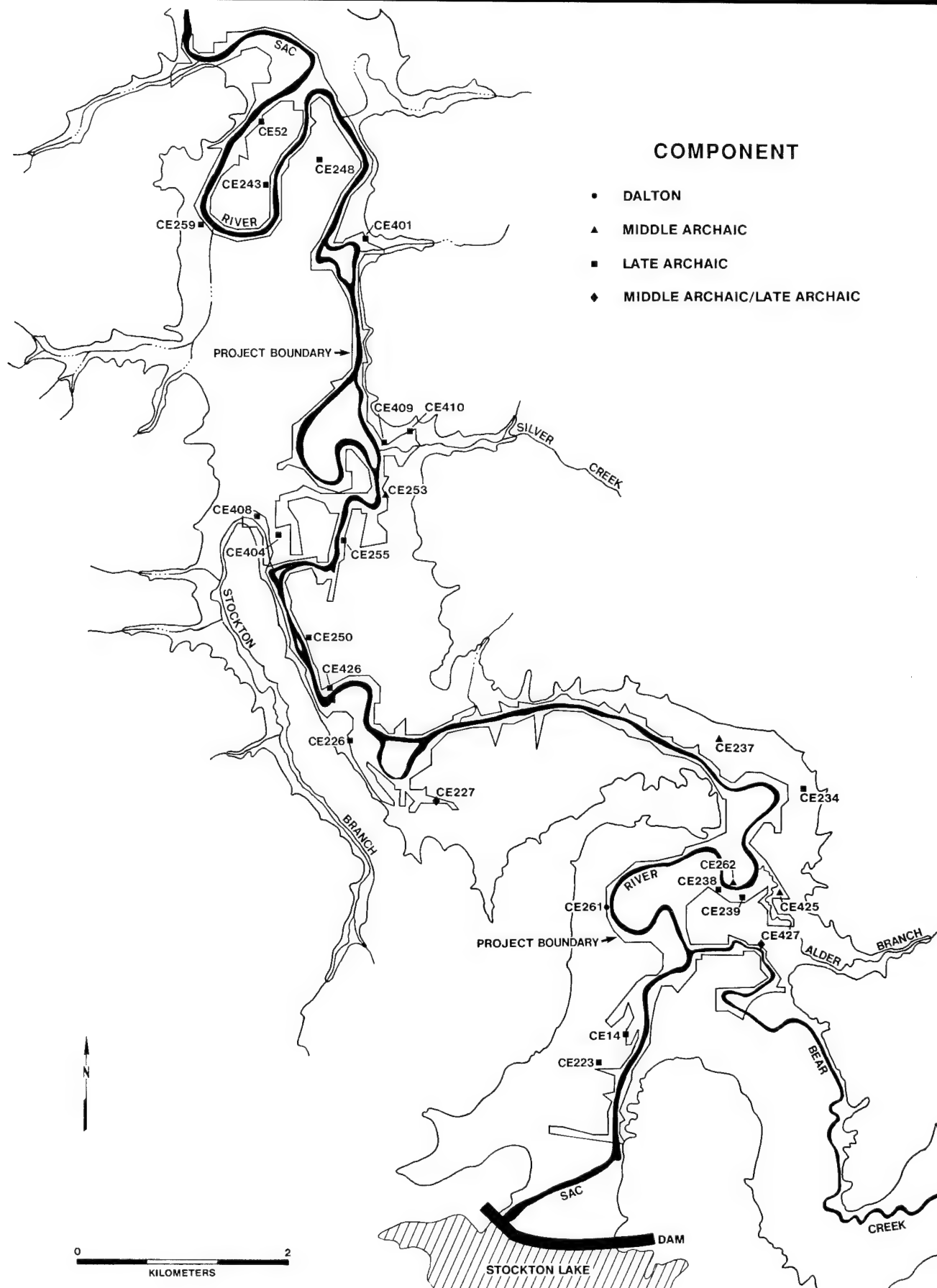


Figure 26. Location of Dalton and Archaic sites in the Downstream Stockton study area.

addition, Dalton points have been found on the surface of a number of sites (Roper 1983). The Dalton occupations at Rodgers Shelter date to 10,500-9550 years B.P.

The Montgomery site (23CE261) is buried in Holocene alluvial deposits at a depth of 3.3 m below the surface and consists of multiple small overlapping occupational areas. While large scale excavations have not been conducted at the Montgomery site, limited excavations and data obtained by local collectors indicates that the Dalton deposits at the site are fairly extensive. In addition, projectile points recovered from 23CE246 by a local collector indicate the possible presence of a Dalton or Early Archaic occupation at this site.

A clear separation of the Early and Middle Archaic period is not possible along the Osage drainage (Roper 1981). This is principally attributed to Early Archaic occupations likely being buried in early Holocene alluvium. The Early Archaic is principally known from Rodgers Shelter and is characterized by Rice and Rogers lanceolates, Graham Cave notched and Rice Lobed points (Kay 1982b). Dates associated with these points range from 9000-8100 years B.P. An Early Archaic component also appears to be represented at the Montgomery site (Collins et al. 1983), and, as noted above, a possible Early Archaic occupation may be present at 23CE426.

The Middle Archaic is better represented along the Osage drainage, but again the best evidence comes from Rodgers Shelter. Typical Middle Archaic forms from Rodgers Shelter include flared base Johnson points, various notched forms, Hidden Valley contracting stem and concave based side notched points (Kay 1982b).

Seven sites located in the Downstream Stockton study area contain Middle Archaic components including 23CE227, 23CE237, 23CE253, 23CE261, 23CE262, 23CE425 and 23CE427, and possibly at 23CE246 (Figure 26). Five of these sites were tested during the course of the 1986-1987 investigations. The most detailed information comes from a transitional Middle Archaic/early Late Archaic component at 23CE427, which has been radiocarbon dated at 4500 years B.P. 23CE262 is a redeposited isolated find consisting of a Rice Lobed projectile point and is probably associated with the nearby Montgomery site. 23CE425 is a fairly large surficial scatter containing Jakie Stemmed projectile points that appears to represent a residential campsite. 23CE246 is a buried stratified residential camp from which Rice Lobed projectile points were collected.

To the south of the project area, the Middle Archaic White River complex has been defined by Chapman (1975:159-171) based on a series of sites along the White River in the Table Rock and Bull Shoals Lake areas. Diagnostic artifacts of the White River complex include Big Sandy Notched and Jakie Stemmed points along with fully grooved axes and celts. Middle Archaic Rice Lobed and Big Sandy Side Notched points have been recovered from the Montgomery site (Collins et al. 1983). While most of these points were collected from the eroded river bank along the site, a few seemed to have been derived from deposits above the Dalton/Early Archaic levels suggesting that a Middle Archaic

component was present at the Montgomery site. A number of Jakie Stemmed points were also recovered from 23CE425 and 23CE427 during the 1986 investigations. Douthit (1981:54,512) has found that Middle Archaic materials from along the James River south of Springfield also generally resemble the White River complex and she suggests that the increased number of sites attributable to this complex may indicate a slight population increase during the Middle Archaic period. The number of Middle Archaic occupations in the study area relative to the general dearth of earlier occupations lends some support to this suggestion.

The Late Archaic period along the Osage drainage witnesses an increase in population, particularly as is evidenced by the increasing density of site. A number of points are characteristic of this period including Afton, Smith, Sedalia and Etley. These types are diagnostic of sites included in the Sedalia phase by Chapman and the Titterington phase by Cook (1976). More recently, Schmits and Bailey (1985) have found that the Smith and Etley forms characterize Titterington phase sites located in central Missouri.

Kay (1982b) has included the extensively stratified Late Archaic occupations at Phillips Spring along the Pomme de Terre drainage with the Sedalia phase. The Sedalia phase as originally defined (Chapman 1975) was primarily located in central and northeast-central Missouri. Sedalia phase traits consist of several distinctive point types including Sedalia Lanceolate Etley, Smith Basal Notched and Stone Square Stemmed points, as well as Clear Fork Gouges and Sedalia Diggers. Kay (1983) dates Horizon III at 2500-3600 years B.P. and suggests distinguishing between Titterington phase sites along the Salt River drainage and Sedalia phase sites along the southern Prairie Peninsula in central Missouri.

To the south of the project area, Chapman (1975) has defined the James River complex in the Table Rock Lake area along the White River drainage. Diagnostic projectile points included Table Rock Stemmed, Afton Corner Notched, Stone Square Stemmed and Smith Basal Notched. Other tools of the complex are triangular bifaces, chipped stone axes, hafted drills, chert hammerstones, manos and anvils.

A total of 21 sites containing Late Archaic components have been identified in the Downstream Stockton study area, including 23CE14, 23CE52, 23CE223, 23CE226, 23CE227, 23CE234, 23CE238, 23CE239, 23CE243, 23CE248, 23CE250, 23CE253, 23CE255, 23CE259, 23CE401, 23CE404, 23CE408, 23CE409, 23CE410, 23CE426 and 23CE427 (Figure 26). Nine of these sites were tested during the 1986-1987 investigations including 23CE52, 23CE226, 23CE227, 23CE238, 23CE239, 23CE253, 23CE409, 23CE426 and 23CE427. Afton, Stone Square Stemmed, Smith Basal Notched and Table Rock Stemmed points were recovered from the excavations at the nine Late Archaic sites tested during the present investigations, indicating a fairly widespread occupation of the Sac River valley during this period. The nature of the relationship between these occupations and the Late Archaic complexes to the northeast and south cannot be determined on the basis of the presently available data.

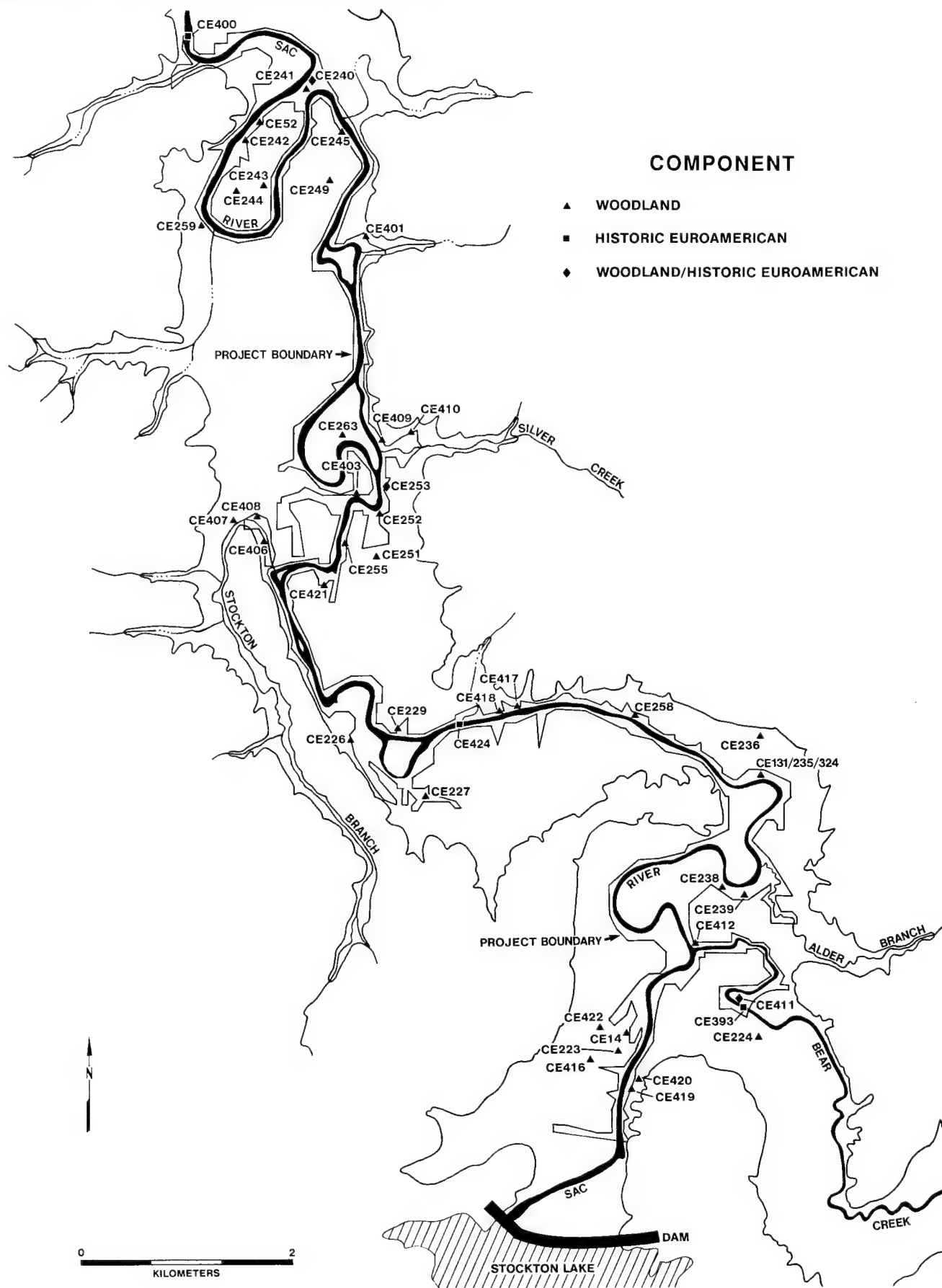


Figure 27. Location of Woodland and Historic Euroamerican sites in the Downstream Stockton study area.

The specific identity of Woodland complexes is poorly known along the Osage drainage, although a large number of sites date to this period (Roper 1981). Very little material has been found that actually can be assigned to the Middle Woodland period. Perhaps the earliest Woodland component is that from Boney Springs located along the Pomme de Terre drainage in the Ozark Highlands (Wood 1976). Points from this site consist of contracting stemmed Langtry points. Ceramics include sand and limestone tempered sherds with cordmarked surfaces. Three associated radiocarbon date range from 1900±80 to 1920±50 years B.P.

Two of the better known Woodland sites in the Stockton Lake area are the Flycatcher and Dryocopus sites. Three structures represented by oval or semicircular postmold patterns were excavated at the Flycatcher site (Pangborn, Ward and Wood 1971). Pits and hearths were located between the houses. Ceramics were not present at the site and the projectile points consisted of Gary dart points. Two dates of 1235±95 and 40±100 years B.P. were obtained from the site, although the investigators suggest that the site dates to about 950 years B.P.

The Dryocopus site contained four structures similar to those found at Flycatcher with features and hearths located between houses (Calabrese et al. 1969). A similar late date of 475±100 years B.P. was obtained from the site. The projectile points consist of dart points including corner notched expanding forms and straight based contracting stemmed Langtry points. Despite the differences in point assemblages, Calabrese et al. (1969) suggest that Dryocopus and Flycatcher are roughly contemporaneous and relate to a single cultural complex.

The Boliver Burial Complex has been defined on the basis of the excavations at nine burial mounds in Stockton Lake and is estimated to date to the Late Woodland period from 1050 - 750 years B.P. (Wood and Brock 1985).

The Lindley phase is the most westerly Late Woodland expression in the Ozark Highland and is located primarily along the central Pomme de Terre drainage and possibly extends into the Sac and Niangua drainages (McMillan 1965). Diagnostic artifacts include Rice Side Notched, Gary and Langtry contracting stemmed dart points and arrow points such as Scallorn, Mississippi Triangular, Cahokia Notched and Huffaker Notched (Wood 1961). Ceramics consist of thick, poorly fired, limestone tempered wares. Large base camp sites are located mostly on major stream terraces and are probably the result of repeated overlapping occupations. Other Lindley phase occupations are found in rock shelters such as short-term hunting and fishing encampment at Rodgers Shelter (McMillan 1976b). Also found along stream terraces are single occupation base camps and short-term special purpose camps. Moffat and Houston (1986) assigned site 23CE119, located below Stockton Dam, to the Lindley phase on the basis of limestone tempered ceramics recovered from the site.

Based on her survey of the Truman Lake area, Roper (1981) defined three Woodland stylistic complexes. The first was stylistically similar to Middle Woodland complexes elsewhere in Missouri and is primarily distinguished by the presence of Snyders points. The second is

represented by contracting stemmed Langtry and Gary points similar to those from the Boney Springs, Flycatcher and Dryocopus sites. The third Woodland complex defined by Roper (1981) is represented by Scallorn arrow points and Rice Side Notched points. This complex is comparable to the Lindley focus and Fristoe Burial complex defined by Wood (1961). Roper implies that the Snyders complex would date early in the Woodland sequence, that the Langtry/Gary complex has a long duration and that the Scallorn/Rice complex would date in the Woodland sequence.

While the Woodland period is poorly defined in the study area, sites assignable to this period are the most numerous (Table 18). A total of 41 sites containing Woodland components have been identified. These include 23CE14, 23CE52, 23CE131/235,324, 23CE223, 23CE224, 23CE226, 23CE227, 23CE229, 23CE236, 23CE238, 23CE239, 23CE240, 23CE241, 23CE242, 23CE243, 23CE244, 23CE245, 23CE249, 23CE251, 23CE252, 23CE253, 23CE255, 23CE258, 23CE259, 23CE263, 23CE401, 23CE403, 23CE406, 23CE407, 23CE408, 23CE409, 23CE410, 23CE411, 23CE412, 23CE416, 23CE417, 23CE418, 23CE419, 23CE420, 23CE421 and 23CE422.

Sites with Woodland components tested in 1986 include 23CE52, 23CE226, 23CE227, 23CE229, 23CE238, 23CE239, 23CE242, 23CE245, 23CE253, 23CE258, 23CE263 and 23CE409. Except for 23CE229 and 23CE253, all appear to date late in the Woodland sequence. The data recovered during these investigations does little to clarify the Woodland period cultural sequence in the study area.

Little evidence of Mississippian occupation of the western prairie region of Missouri is available. What evidence is available indicates Mississippian Steed-Kisker (Wood 1965) and Plains Village Pomona occupation of the area (Roper 1981). These sites are mostly located in rock shelters. Roper (1977:25) suggested that Pomona people may have occupied the Downstream Stockton Project area. Brown (1985:440) has recently redefined Pomona as a variant consisting of the Clinton, Wolf Creek, May Brook and Apple Valley phases. He suggests that the Ozark Highlands area, including the Downstream Stockton Project Area, was used as hunting territory by the May Brook and Wolf Creek phase Pomona variant groups. Little additional data was recovered during the current investigations concerning this cultural period.

Little is known about the Protohistoric period in the region. The most marked cultural development in central Missouri during the Protohistoric period is the Oneota culture (Henning 1970). Oneota culture was principally centered along the lower Missouri River to the north and northeast of the Osage drainage. No sites containing Protohistoric components have been identified in the study area.

A total of six Historic Euroamerican sites (23CE240, 23CE253, 23CE393, 23CE400, 23CE411 and 23CE424) have been recorded in the study area although numerous others are likely present. A partially standing historic bridge (23CE424) was recorded during the 1986 survey and an historic farmstead was located during the testing of 23CE253.

SETTLEMENT PATTERNS

While a considerable amount of archaeological survey and testing work has been conducted within the Downstream Stockton Project area, few sites have been investigated in sufficient detail to make meaningful statements regarding prehistoric settlement patterns. Nevertheless, some preliminary statements can be made on the basis of the data presently available.

As discussed above, although the Paleoindian period is poorly known, most finds of Paleoindian points in Missouri occur on hilltop locations and Chapman (1975) has suggested that Paleoindian camps were concentrated in upland areas. However, Roper (1981) has suggested that Paleoindian groups occupied lowland terraces and floodplains, but that these sites have been deeply buried or have been destroyed by erosion. Presumably, subsistence was based on large herbivores and mobility was high, as is evidenced by the lack of longer term residential camps that are associated with later occupations of the area.

Dalton and Early Archaic settlement patterns are also poorly known. Based on the limited data obtained from the Montgomery site, the evidence points to the presence of small multiple occupations in floodplain areas. Presumably these represent small hunting and foraging camps, perhaps similar to those postulated for the Paleoindian period.

Somewhat more information is available on Middle Archaic settlement patterns in the project area. Roper (1977) has suggested that during the Middle Archaic period base camps were established in the bottoms with small limited activity camps located next to the river. Based on the 1986 investigations Middle Archaic components are present on low terraces at 23CE227, 23CE253 and 23CE425 and are also deeply buried in the floodplain as evidenced at 23CE427 and perhaps at 23CE426. Except for 23CE253, these sites are clustered in the southern portion of the project area near the Alder Branch and north of Bear Creek (Figure 26). The sites located appear to include both residential camps and smaller extractive sites. The Middle Archaic components at 23CE227 and 23CE253 have been tentatively identified as extractive sites. However, both are large multicomponent sites and with the exception of the projectile points, it is impossible to interpret what component the remainder of the cultural materials are associated with. 23CE425 has been identified as a residential camp on the basis of its large size and range of tools recovered. However, the light density and intermittent distribution of artifacts recovered indicates that the site could also be an extractive camp. The Middle Archaic component at 23CE427 has been identified as a residential camp, but may be a base camp, as discussed by Roper (1977), based on the high artifact content and range of tool types present. The wide range of activities inferred from the Middle Archaic component from 23CE427 includes the gathering and processing of vegetal foods suggesting that the Middle Archaic subsistence was focused on the greater exploitation of plant foods.

Based on the limited data from the 1986 testing program, it appears the Middle Archaic settlement patterns in the Downstream Stockton area

conform to Roper's (1977) model. The large residential or base camp, 23CE427, is located along the Bear Creek floodplain approximately 1 km east of the Sac River, while the smaller residential or extractive camps are all situated in the floodplains or terraces along the Sac River.

More information is available regarding Late Archaic settlement patterns. During this period, climatic conditions changed from an arid regime to one which was similar to conditions known today (King 1980). The increase in available moisture which followed the Hypsithermal resulted in renewed development and expansion of oak-hickory woodlands and cultural adaptation reflects an increased number of available ecological niches brought about by these more mesic conditions. Hunting and gathering remained the dominant subsistence strategy, but because of the greater range of resources exploited, Late Archaic tool kits expanded in range and complexity, including tools associated with plant food processing. Intensified plant utilization may have laid the foundation for incipient horticulture and agriculture first evidenced during this period.

Sedalia phase chronology and settlement-subsistence patterns are best known from the work along the Pomme de Terre drainage (Kay 1983). Faunal and floral remains from these sites indicate a subsistence pattern focused on the deciduous forest, aquatic and prairie communities with deer being the most important species. Other resources exploited include antelope, freshwater mussels and fish. A substantial component of the subsistence pattern was provided by the collecting of mast resources, particularly acorns, hickory nuts and walnuts. Cultigens, including squash and bottle gourd, were present at Phillips Spring.

The Sedalia settlement pattern suggested by the Pomme de Terre data includes semi-sedentary base camps located around the lowland artesian springs and intermittent usage of cave and rock shelter sites (Kay 1983:63). The former appear to be horticultural sites occupied on an annual or multiseason basis during the spring through fall seasons. The cave and shelter sites appear to have been intermittently occupied by small social units. Mortuary practices at these habitation sites include the burial of single individuals with little or no ritual elaboration. Associated mounds document a more elaborate mortuary program suggesting variations in social status within the Sedalia phase society.

Roper (1977) has observed two definite types of Late Archaic sites. These include small extractive sites located near the river and residential sites located at the base of the bluffs. A total of nine sites investigated in 1986 contained Late Archaic components. These include one identified as a base camp (23CE409), four identified as residential camps (23CE226, 23CE227, 23CE238 and 23CE426) and four extractive sites (23CE52, 23CE239, 23CE253 and 23CE427). 23CE409 is located east of the channel of the Sac River that has cut through a meander loop and formed Keith Island and has been interpreted as a base camp based on the density and variety of tools recovered. While the site is presently situated along the river, it would have been much closer to the bluff before an old meander loop of the river cut off. The

four sites identified as Late Archaic extractive sites and two of the residential campsites are all located along the present channel of the Sac River. The other two residential camps (23CE226 and 23CE227) are both located at the base of the bluffs. Based on these data, the Late Archaic sites tested during the 1986 investigations appear to also conform to Roper's (1977) model of Late Archaic settlement patterns in the area. The base camp and two of the sites identified as residential camps are located along or near the base of the bluffline and two of the residential campsites and all of the extractive camps are located along the river channel.

The greatest number of sites identified in the study area date to the Woodland period. In general, the Woodland period was characterized by increasing sedentism, increasingly restricted hunting territories, increased population, and increasing dependence upon cultigens. The Early Woodland has traditionally been characterized by the appearance of ceramics, horticulture, and burial mounds. It should be noted, however, that ceramics, burial mounds, and horticulture are also found in Late Archaic contexts (Reid 1983; Kay 1983). Goldberg (1981) has noted that there is no evidence for a major cultural break between the Late Archaic and Early Woodland periods in southwest Missouri and that the concept of an Early Woodland period may be inappropriate for the region. Recent excavations at the Little Green Heron site (23GR535) near the headwaters of the Little Sac River tend to support this view (Parisi 1985).

In eastern North America, the Middle Woodland was a period of broad cultural development and complexity. Horticulture and elaborate decorative and stylistic techniques appeared rapidly in much of Midwestern North America. Struever (1964) described a "Hopewell Interaction Sphere" for this regional exchange system.

As discussed above, Roper (1977) divides the Woodland sites in the project area into two groups. The first group is characterized by Langtry, Gary and Rice Side Notched points and the second group contained smaller arrow points such as Scallorn, Cahokia Notched and triangular forms. Roper suggests that the two Woodland types are probably temporally sequential.

Woodland sites tested during the present investigations have been mainly assigned to the Late Woodland period based on the presence of diagnostic artifacts recovered such as Cupp or Scallorn projectile points. Only two of the 12 sites containing Woodland components (23CE229 and 23CE253) have been assigned to the earlier Woodland stage and this was based largely on data previously collected by Roper (1977). These earlier sites have been identified as base camps based on their size and artifact densities. The remainder of the Woodland sites investigated have been assigned to the Late Woodland period. These include two base camps (23CE238 and 23CE258) and a number of residential and extractive camps. The two base camps are located along the present channel of the Sac River in the southern half of the study area, while the smaller residential and extractive sites are scattered throughout the entire study area. Based on these limited data, it can be postulated that the Late Woodland inhabitants established small hamlets

near the river and a variety of smaller special purpose extractive campsites that are probably associated with the larger base camps. The presence of both the base camps and residential or extractive campsites indicates the presence of a fairly substantial Late Woodland occupation in the study area.

SUMMARY AND RECOMMENDATIONS

Over the past 20 years, a substantial body of information on the archaeology of southwest Missouri has accumulated. The recent trends in federally funded research has been away from "salvage" archaeology and focused more toward the management and preservation of significant cultural resources located on government land. The National Register of Historic Places has played a central role in the development of this trend and forms the centerpiece of current cultural resource management. Sites which are determined eligible for nomination to the National Register warrant consideration in planning for adverse impacts to the resource.

The 1986 investigations at the Downstream Stockton Project area were the result of recommendations made in two previous cultural resource surveys (Roper 1977; Moffat and Houston 1986). Based on these recommendations, 14 previously recorded sites and four previously unknown sites recorded in the 1986 cultural resource survey were tested to determine their eligibility for the National Register. Summary data for the sites investigated including cultural affiliation, inferred site function and National Register eligibility are presented in Table 19.

Based on the results of the test investigations, five sites including 23CE226, 23CE238, 23CE409, 23CE426 and 23CE427 are recommended to be eligible for the National Register. Sites 23CE226 and 23CE409 are not being adversely impacted and no further work is recommended at this time. As site 23CE238 cannot be taken out of agricultural production, and since bank erosion cannot easily be stabilized, limited data recovery excavations designed to recover sufficient artifactual materials and organics suitable for radiocarbon dating are recommended. The recovery of this data will allow a clear delineation of site function, Woodland and/or Late Archaic settlement-subsistence patterns and cultural sequences. Sites 23CE426 and 23CE427 are being adversely affected by erosion generated by power releases and these sites should either be stabilized or data recovery excavations designed to recover sufficient artifactual materials and organics suitable for radiocarbon dating to allow explication of the cultural affiliation and function of these Archaic sites should be undertaken as soon as possible.

Sites 23CE242, 23CE245, 23CE262, 23CE263 and 23CE423 are located largely or entirely within the slough easement and are not eligible for the National Register. Consequently no further archaeological work is recommended for these sites. Only small portions of sites 23CE52, 23CE227, 23CE229, 23CE230, 23CE253, 23CE258 and 23CE245 are located within the slough easement. While the portions of these sites within the easement do not contain significant deposits, significant deposits

Table 19. Cultural affiliation, inferred site function and National Register recommendations for the sites investigated below Stockton Dam.

SITE NUMBER	CULTURAL AFFILIATION	INFERRED SITE FUNCTION	NATIONAL REGISTER RECOMMENDATION
23CE52	Late Archaic, Late Woodland	Extractive Camp Residential Camp	Potentially Eligible
23CE226	Late Archaic, Late Woodland	Residential Camp	Eligible
23CE227	Middle Archaic, Late Archaic, Late Woodland	Extractive/ Residential Camp Residential/Base Camp Extractive Camp	Potentially Eligible
23CE229	Woodland	Base Camp	Eligible
23CE230	Unknown	Extractive Camp	Potentially Eligible
23CE238	Late Archaic, Late Woodland	Residential Camp Base Camp	Eligible
23CE239	Late Archaic Late Woodland	Extractive Camp	Not Eligible
23CE242	Late Woodland	Extractive Camp	Not Eligible
23CE245	Late Woodland	Extractive Camp	Not Eligible
23CE253	Middle Archaic Late Archaic, Woodland, Historic Euroamerican	Extractive/ Residential Camp Extractive Camp Residential/Base Camp Farmstead	Potentially Eligible
23CE258	Late Woodland	Base Camp	Potentially Eligible
23CE262	Middle Archaic	Isolated Findspot	Not Eligible
23CE263	Late Woodland	Extractive Camp	Not Eligible
23CE409	Late Archaic, Late Woodland	Base Camp Residential Camp	Eligible
23CE423	Unknown	Extractive Camp	Not Eligible
23CE424	Historic Euroamerican Bridge		Not Eligible

continued

Table 19 continued. Cultural affiliation, inferred site function and National Register recommendations for the sites investigated below Stockton Dam.

SITE NUMBER	CULTURAL AFFILIATION	INFERRED SITE FUNCTION	NATIONAL REGISTER RECOMMENDATION
23CE425	Middle Archaic	Residential Camp	Potentially Eligible
23CE426	Dalton/Early Archaic? Middle Archaic, Late Archaic	Residential Camp	Eligible
23CE427	Middle Archaic, Late Archaic	Residential Camp Extractive Camp	Eligible

could occur outside the easements and therefore a determination of National Register eligibility can not presently be made for these sites. Further testing of the portions of these sites outside the easement will be required to ascertain their National Register status. However, no further work or archaeological management of the portions of these sites within the easement is recommended at this time.

The three sites which further date recovery investigations are recommended include 23CE238, 23CE426 and 23CE427. An Early or Middle Archaic component along with multiple Late Archaic components are present at 23CE26, a late Middle/early Late Archaic and Late Archaic components are present at 23CE427 and Late Archaic and Late Woodland components are present at 23CE238.

These chronological sequent series of Archaic occupations span the Early Archaic to Late Archaic periods. The late Middle/Early Late Archaic component at 23CE427 has been dated at 4450 years B.P. and contains a Jakie stemmed point. The somewhat late Late Archaic component at 23CE426 and 23CE238 contain artifact styles similar to the Sedalia phase (ca 4000-3000 B.P.), while the later Late Archaic components at 23CE426 contain point styles similar to those from the Little Green Heron site in southwest Missouri and to Walnut phase site in eastern Kansas.

Further investigation of these sites should be directed toward the recovery of sufficient samples of data to more fully identify the cultural components present along with the recovery of data suitable for the construction of settlement-subsistence patterns. The recovery of this data will provide important information regarding the development of the Sedalia phase and post Sedalia phase Late Archaic manifestations along the Sac River drainage.

The investigation of the Late Woodland component at 23CE238 will provide further information regarding the relationship between this site and the Lindley and Meramec Springs phase. It will also provide additional information regarding Late Woodland settlement-subsistence patterns which are presently not available for the area.

Given the presence of deeply buried deposits encountered at sites 23CE426 and 23CE427 during the present investigations and the reports by a number of local residents within the Downstream Stockton area that unrecorded buried sites are in the process of being adversely impacted within the easement boundaries, it is further recommended that additional survey of the cutbanks of the Sac River and its tributaries be conducted. These surveys should be conducted periodically as the effects of continuing erosion will result in the continuing exposure of archaeological sites. Only by such persistent monitoring of the Downstream Stockton corridor can an accurate and up to date inventory of the cultural resources within the government easement lands be realized.

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APPENDIX I
GLOSSARY OF TECHNICAL TERMS

alluvial soil - A soil developed from alluvium and exhibiting essentially no horizon development or modification of the recently deposited materials.

alluvium - Soils, sands or gravels deposited by the slowing of running water, such as those released when a stream floods.

anthropology - The study of humans inclusive of their physical and cultural attributes. Traditionally, anthropology includes the subfields of physical and cultural anthropology, linguistics, and archaeology.

archaeology - The scientific discipline responsible for recovering, analyzing, and interpreting the unwritten portion of human kind's historic and prehistoric past.

archaeological assessment - An evaluation of the archaeological resources present in an area, their scientific significance, and the cost of protecting or properly investigating them.

archaeological excavation - The scientifically controlled recovery or salvage of a site designed to yield maximum information about the life of the inhabitants, their ways of solving human problems, and of adjusting to and modifying their natural environment.

archaeological inventory - A pedestrian field survey of a given area. This generally includes a records-check.

archaeological resources - Objects and areas made or modified by humans and the data associated with these artifacts and features.

Archaic - A cultural stage prior to the introduction of pottery and agriculture.

arrowhead - A small projectile point often less than one inch in length, used to tip an arrowshaft.

articulated - Bones located in their proper anatomical order.

artifact - A material object made, modified or used by humans. The most common artifacts on archaeological sites include fragments of broken pottery (sherds), stone tools, chips, projectile points, and similar lithic debris.

assemblage - A group of industries found in an archaeological site.

awl - A bone or stone tool used primarily to perforate leather for sewing or in basket weaving.

backed knife - Chipped stone knife with the long edge opposite the cutting edge being intentionally dulled in order to reduce injury to the user.

basal grinding - Dulling the lower lateral edges of a projectile point (usually of Paleo-Indian age) by abrasion in order to reduce the chance of the sinew binding being cut after the point was seated in the shaft.

bifacial - Deliberate alteration upon two opposite surfaces of a stone tool.

blade - Can be either the unhafted portion of a projectile point or a long narrow flake, generally with parallel sides.

blank - An unfinished stone tool partially worked to the shape and size of the intended implement. It is possible that blanks were stockpiled for later completion.

body sherd - Fragment from the lower portion of a ceramic vessel.

B.P. - Before the present.

burial mound - Mounds, often of rock or rock and earth, locally built primarily during the Woodland period which contain human burials.

buried soil - Soil covered by an alluvial, loessal, or other deposit, usually to a depth greater than the thickness of the solum.

camp site - An archaeological deposit, usually small and thin, which is the result of a brief settlement by a group of people.

chert - A structureless form of silica, closely related to flint which was used for chipped stone implements.

chipped stone tools - Knives, scrapers, projectile points, and other artifacts produced by removing flakes.

chronology - The study of a culture or site in terms of its age. The orderly sequence of a series of sites or cultures according to their occurrence in time.

clay - A soil separate consisting of particles 0.002 mm in equivalent diameter. Soil material containing more than 40 percent clay, less than 45 percent sand and less than 40 percent silt.

coiling - A method of manufacturing pottery. Long fingerlike rolls of clay are added one on top of another in a circular fashion, starting at the bottom of a pot and continuing up the sides. The interior and exterior surfaces are then smoothed.

colluvium - A deposit of rock fragments and soil material accumulated at the base of steep slopes as a result of gravitational action.

- complex - A series of assemblages or of components which might be defined as a focus (phase), but where there is enough uncertainty as to their associations to refrain from so grouping them.
- component - The manifestation of any given focus (phase) at a specific site. The social equivalent of component is the community.
- contour - An imaginary line connecting points of equal elevation on the surface of the soil.
- contract archaeology - A recent development in which independent archaeologists contract with government or private companies to carry out any surveys or excavations required by antiquities laws.
- core - Nodule of stone from which flakes are removed. Typically a core is reduced until most usable flakes are obtained and then it is discarded.
- cortex - The outer surface or rind of a chert nodule.
- culture - The lifeways of a particular people, including the habits, customs, and artifacts associated with gaining their living, organizing their social and political activities, and practicing their religious rituals and ceremonies.
- cultural resources - Districts, sites, structures, and objects and evidence of some importance to a culture, a subculture, or a community for scientific, engineering, art, tradition, religious, or other reasons. These resources and relevant environmental data are important for describing and reconstructing past lifeways, for interpreting human behavior, and for predicting future courses of cultural development.
- cultural resource management - The development and maintenance of programs designed to protect, preserve and scientifically study and manage cultural resources.
- curation - The systematic maintenance and storage of the archaeological data base in such a manner as to retain the integrity of those data and allow it to be accessible and usable for future researchers.
- daub - Mud or similar substance used as a plaster to seal cracks and crevices in a dwelling of frame poles interwoven with twigs. This construction technique is called wattle and daub.
- debitage - Residual lithic material resulting from tool manufacture.

determination of eligibility - The determination that a property is eligible for inclusion in the National Register of Historic Places. The determination process, outlined in 36 CFR 63, provides the mechanism whereby a government agency can determine whether its undertaking affects significant properties, as required by P.L. 93-291, Section 3 (a) or (b), for those properties not already on the National Register.

diagnostic artifact - Material remnant of a historic or prehistoric technology that provides a temporal and cultural association, which has been determined by previous scientific investigations.

drill - A chipped stone tool with a beveled, pointed end used as a drill or perforator.

effect - An undertaking shall be considered to have an effect whenever any condition of the undertaking causes or may cause any change, beneficial or adverse, in the quality of the historical, architectural, archaeological, or cultural characteristics that qualify the property to meet the criteria of the National Register.

environment - The physical character of the area in which a culture occurs, including its flora, fauna, climate and land features.

erosion - The wearing away of the land surface by running water, wind, ice, or other geological agents, including such processes as gravitational creep.

feature - An area in or on the ground where evidence of past human activity can be seen or detected. Among the most frequent features at archaeological sites are fire pits, storage pits, burial pits, hard-packed house floors, and post holes.

flake - The thin, flattened piece of lithic raw material removed from a stone by pressure or percussion-flaking techniques.

flake tools - Stone tools made from flakes removed from cores.

floodplain - The land bordering a stream, built up of sediments from overflow of the stream and subject to inundation when the stream is at flood stage.

fluted - Term which refers to a stone tool manufacturing technique associated with the Paleo-Indian period and which consists of relatively long parallel-sided scars on tool surfaces.

focus - An archaeological cultural unit possessing traits sufficiently distinct or characteristic to distinguish it from all other units of a locality or region and may in instances correspond closely to the local tribe in ethnology.

geomorphic - Relating to the form of the earth or its surface features.

- gouge - A chisel with a scoop-shaped cutting edge to be used in wood-working.
- grab sample - A sample of artifacts recovered from the general provenience of the site rather than being individually mapped or collected by grid quadrants.
- graver - A small or cutting tool with a sharp point or edge used for boneworking.
- granular structure - Soil structure in which the individual grains are grouped into spherical aggregates with indistinct sides. Highly porous granules are commonly called crumbs.
- grit tempering - Crushed particles of rock such as limestone, chert, or granite which are added intentionally to pottery clay. The grit tempering is supposed to keep the pottery vessel from breaking when it is fired.
- grog - Previously fired clay sherds ground and used as a temper in making new ceramic vessels.
- ground stone - Stone artifacts manufactured by pecking and abrading techniques. Usually included in this category are grinding and pounding implements such as the manos, metates, mortars, and pestles, as well as celts and axes.
- haft element - The portion of a tool exhibiting some facility, (e.g., notching, constriction, and/or grinding), differentiating it from the working portion of a tool and allowing it to be fastened to a handle or shaft.
- hammerstone - A rounded stone often a river cobble used as a hammer and characterized by a battered end.
- horizons - Broad cultural similarities observed between a few succeeding phases in a given locality and/or between several contiguous localities such as different river valleys.
- horizon, soil - A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an upper case letter represents the major horizons. Numbers or lower case letters that follow represent subdivisions of the major horizons. The major horizons of mineral soil are as follows:
- 0 Horizon. An organic layer of fresh and decaying plant residue at the surface of a mineral soil.
 - A Horizon. The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface

horizon, most of which was originally part of a B Horizon.

Ap Horizon. The surface layer of a soil disturbed by cultivation or grazing.

B Horizon. The mineral horizon below an A horizon. The B Horizon is in part a layer of transition from the overlying A Horizon to the underlying C Horizon. The B Horizon also has distinctive characteristics such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A Horizon; or (4) a combination of these. The combined A and B Horizons are generally called the solum, or true soil. If a soil does not have a B Horizon, the A Horizon alone is the solum.

C Horizon. The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the A or B Horizons. The material of a C Horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, the Roman numeral II precedes the letter C.

R Layer. Consolidated rock beneath the soil. The rock commonly underlies a C Horizon, but can be directly below an A or B Horizon.

indurated clay - Temper inclusions in ceramic paste made from ground shale.

in situ - A Latin phrase meaning "in place". An artifact or object found in its original, undisturbed position. Items found in situ provide an opportunity for establishing firm stratigraphic or other associations for dating purposes.

incising - The act of cutting a design into a pottery surface.

integrity - A site that is intact and undisturbed enough to permit the preservation of significant scientific data possesses integrity.

intensive survey - Systematic, detailed, on-the-ground field inspection conducted by professional archaeologists which is sufficient to permit determination of the number and extent of the resources present and their scientific importance.

intrusive - An archaeological object occurring out of its proper cultural and chronological context.

isolated find - The occurrence, usually on the surface, of a single artifact. Not considered a true site.

kill site - An archaeological site where animals were killed or trapped, and normally having few artifacts in proportion to bone.

knapping - The act of flaking stone tool artifacts.

lanceolate - Shaped like a lance, being tapered at one or both ends. In archaeological usage, the term usually refers to long slender chipped stone points or knives pointed at one or both ends.

lithic - Referring to stone.

lithic scatter - A site characterized by a number of flakes and/or tools.

loam - The textural class name for soil having a moderate amount of sand, silt, and clay. Loam soils contain 7 to 27 percent of clay, 28 to 50 percent of silt, and less than 52 percent of sand.

loess - Material transported and deposited by wind and consisting of predominantly silt-sized particles.

mano - A hand stone that has been shaped for use as a grinding or mealing stone in connection with a metate. It is used for crushing and grinding vegetable matter.

metate - A flat stone upon which seeds and other foods are mashed and ground. A hand stone or mano is used with it.

midden - A trash or refuse deposit.

mitigation - The amelioration of losses of significant scientific, prehistorical, or archaeological data accomplished through pre-planned actions to preserve or recover such data by application of professional techniques and procedures.

msl. - Mean sea level.

national register, the - An official list maintained by the National Park Service of architectural, historical, archaeological, and cultural sites of local, state, or national significance worthy of preservation. These sites are nominated to the Register by states or federal agencies and are approved by the National Register staff of the National Park Service.

ocher - A crushed ferruginous (iron rich) mineral ranging from yellow to brown, used as a pigment. Red ocher (hematite) is very often used for ceremonial purposes.

ossuary - A grave where bones of several persons have been deposited.

palynology - The scientific study of pollen.

percussion, direct - A knapping technique in which the flaking tool such as a hammerstone or antler baton is struck on the core or partially finished tool.

percussion, indirect - A knapping technique in which the flaking tool is struck on an intermediate tool (punch) which in turn strikes the core or partially-finished tool.

ped - A unit of soil structure such as an aggregate, crumb, prism, block, or granule, formed by natural processes (in contrast with a clod, which is formed artificially).

perforator - A chipped stone artifact used as an awl or punch.

petroglyph - An Indian drawing or other symbol incised on a natural rock outcrop.

phase - The manifestation of a basic cultural unit that could be comparable to social units in ethnography, such as a tribe or interrelated bands or any unit that has relatively definite boundaries spatially and chronologically and is relatively uniform culturally.

plano convex - Having one flat and one convex side.

platy - Consisting of soil aggregates that are developed predominately along the horizontal axes that are laminated and flaky.

pleistocene - The earlier epoch of the Quaternary characterized by recurrent ice ages.

point - A bifacially flaked, bilaterally symmetrical chipped stone artifact exhibiting a point of juncture on one end and some facility for hafting on the opposite end.

postmold - A stain in the soil representing a house post or any wooden post after the wood has rotted away. It is identifiable by the darker color than the surrounding soil matrix.

pot sherd - A piece of a broken pottery vessel.

pottery - A mixture of clay and a tempering agent which is hardened by firing.

preform - Any piece of lithic material that has been modified to an intended stage of a lithic reduction sequence in a specified assemblage. It is not a finished implement and it has the type within the assemblage.

prehistoric - Prior to written records.

pothunter - An individual who digs sites for pottery and other artifacts for personal gain. This person cares nothing for context, does not accurately record artifact proveniences or publish results, and often shows disdain for federal regulations which prohibit such activity on public lands.

pressure flaking - A method of chipped stone manufacture in which the knapper puts the tip of the flaking tool (e.g., antler tine) on the edge of the nearly-finished stone tool and then "pushes" off each flake. Pressure flaking is generally the final stage in the making of a stone implement.

primary flake - One of the initial flakes detached from the outside of a core. A portion of the core's weathered exterior (cortex) is retained on the flake.

primitive - Used to describe a culture or individual that has not developed a written language.

principal investigator - A professional archaeologist and the person directly responsible for the location and identification or data recovery project. He is responsible for the validity of the material presented in cultural, historical, and archaeological reports. The principal investigator signs the final report and in the event of controversy or court challenge testifies on behalf of the client in support of report findings.

projectile point - A bifacially-flaked implement with a pointed distal end designed for penetrating an animal's hide and a blunted proximal end designed for attachment to a shaft (e.g. a spear point, dart point, or arrowhead).

Protohistoric - The time immediately preceding the beginning of written history in an area. Quite often European trade goods occur on protohistoric sites, since trade items found their way to the Indians before there was any written history concerning them.

provenience - The exact horizontal and vertical location of an artifact or other remains within a site.

quarry - A location where aboriginal knappers obtained the raw material to make their tools. Much of the reduction of large nodules was often done at the quarry, in order to avoid transporting unnecessary weight back to camp (usually in the form of crude bifaces called blanks).

quartzite - A compact, granular rock composed of quartz, used for chipped stone implements.

radiocarbon dating - A method of obtaining the date of bone, shell, or other organic items by measuring the amount of radioactivity of Carbon 14 in them.

reconnaissance Survey - A literature search and records review plus a preliminary on-the-ground surface examination of limited but representative portions of the area to be affected, adequate to assess the general nature of the resources probably present and the probable impact of a project.

research design - A plan, usually generated by the principal investigator in response to a scope-of-work, outlining the proposed approach to a location, identification, or data recovery project (systematic inventory, field survey, testing, or large scale excavation). The research design spells out relevant research problems, research methods, and some predicted results of the study.

retouch - Secondary flaking of a stone implement to remove surface irregularities and to refine or modify the cutting edge. Always done by pressure flaking.

rim sherd - A fragment of the upper circular edge of a ceramic vessel.

rock shelter - An overhang, usually along the base of a cliff or escarpment in which occupation by humans has taken place.

sand - A soil particle between 0.05 and 2.0 mm in diameter.

scope-of-work - A document prepared by a sponsoring agency, the State Historic Preservation Officer or the National Park Service, setting forth its requirements in a cultural resources study.

scraper - A stone implement used to remove fat from hides, smooth wood, scrape leather, etc. Different types are described in terms of the shape and/or position of the cutting edge: side scraper, end scraper, scraper, etc.

sediment - Deposit of mineral particles, usually clay, silt or sand.

sedimentation - The natural process of soil accumulation derived from alluvial (riverine) or colluvial (mass earth movement) processes.

serrated - Having a saw-toothed or multiple-notched cutting edge.

settlement pattern - Distribution of various sites of human activity in a locality (village sites, quarry sites, kill sites, ceremonial sites, etc.).

shatter - Irregular pieces of lithic manufacturing debris.

shell tempering - Small pieces of crushed shell added to the clay before making pottery common in the Mississippian or Plains Village time period.

sherd - A broken piece of a pottery vessel. One of the most durable of archaeological specimens.

- silt - A soil separate consisting of particles between 0.05 and 0.002 mm in equivalent diameter. A soil textural class.
- site - Any area or location occupied as a residence or utilized by humans for a sufficient length of time to construct features, or deposit a number of artifacts (e.g., camps, villages, rock paintings, quarry, etc.).
- soil - A dynamic natural body on the surface of the earth in which plants grow, composed of mineral and organic materials and living forms. The collection of natural bodies occupying parts of the earth's surface that support plants and that have properties due to the integrated effect of climate and living matter acting upon parent material, as conditioned by relief, over periods of time.
- soil map - A map showing the distribution of soil types or other soil mapping units in relation to the prominent physical and cultural features of the earth's surface.
- soil profile - Composite distinctive layers and zones of a soil, from the surface to the parent material.
- solum - The altered layer of soil above the parent material that includes the A and B Horizons.
- spokeshave - A specialized type of scraper with a rounded notch in the edge and probably used for scraping wooden shafts.
- strata - Natural or cultural layers in the soil or archaeological sites produced by the accumulation of soil and/or refuse deposits.
- stratigraphy - The superimposition of geological or archaeological deposits one upon the other. The relationships indicated by stratigraphy provide a relative system of dating archaeological materials and are therefore extremely important in establishing cultural sequences in an area.
- stratum - Single sedimentary layer (plural, strata).
- temper - Any substance, such as crushed shell, grog, crushed grit or sand added to pottery clay in order to prevent cracking when the vessel is fired.
- terrace - A level, usually narrow, soil surface bordering a river or lake.
- testing - A scientific technique of investigating archaeological sites consisting of physical excavation of portions of a cultural or natural deposit and permanent recording of the results.
- topsoil - The upper part of the soil that is rich in organic matter.

trait, cultural - A single element or item that is considered to be part of a particular culture. It may be an artifact, house structure, pit, or any smallest unit of a cultural manifestation.

tradition - The socially transmitted cultural form that persists in time (e.g., an artifact tradition, a religious tradition, local cultural tradition, regional cultural tradition, technological tradition, or a major cultural tradition).

transverse fracture - A break in an artifact, parallel or approximately parallel to the base.

typology - The classification of similar artifacts into groups.

unifacial - Deliberate alteration on one surface or edge of a stone tool.

utilized flake - A flake showing evidence of use or wear on one or more edges. No flakes have been intentionally removed, but very small flakes have incidentally detached during use.

vandal - Individual who deliberately destroys or damages archaeological sites.

ware - Pottery or vessels of fired clay.

wattle and daub - A technique of construction involving a framework of poles and interwoven branches which are plastered with clay.

workshop site - An archeological deposit characterized by abundant flaking debris where artifacts were made.